RUSS OLSON VOLUME 11

EQUIPMENT

Description

Car Building Programs, Double-Deck Cars, Classification System, Main Steam Station Rail Equipment, PCC Cars, Rebuilding Programs, Building-Rebuilding-Disposition Dates

Sub-divisions Within This Volume

- Contents of the Front Pocket
- Car Building Programs
- Double Deck Cars
- Classification System
- PCC Cars
- Rebuilding Programs
- Building, Rebuilding, and Disposition Dates

CONTENTS OF
FRONT POCKET

ONE/TWO MAN CARS (527)

1166-1201,1203,1205-1211,1213-1229,
1233, 1235-1253
1293-1328
1382, 1384-1398,1402,1408,1415,1417,1420
1424-1425,1430,1433,1437,1440,1441,1446
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FRONT EXIT GATE CARS (144)

1254, 1266-1292
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1403-1407,1409-1414,1416,1418-1419
1421-1423,1426-1429,1431-1432,1434-1436
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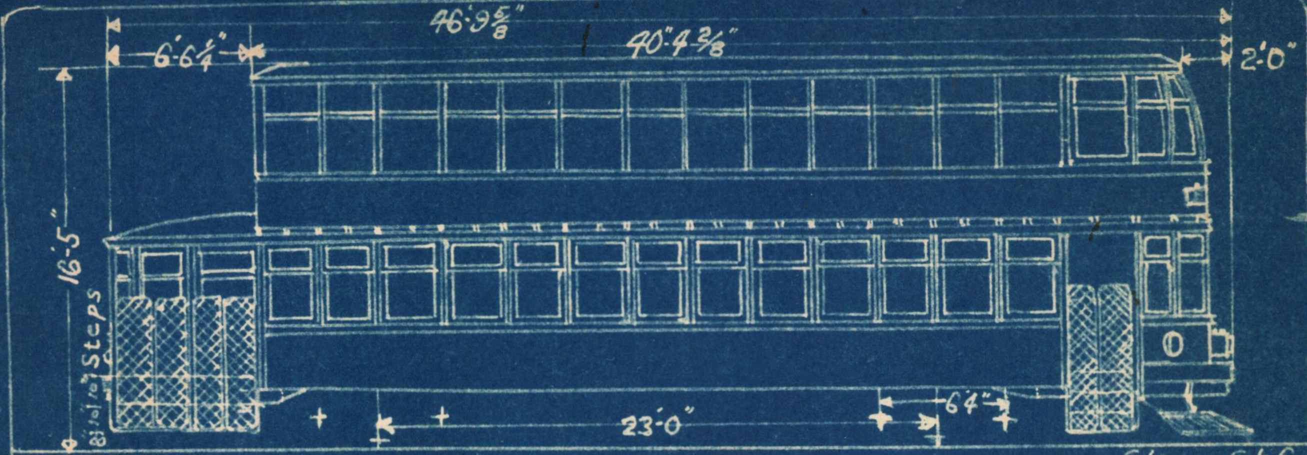
1481,1483,1484,1486,1493,
1514,1542,1547,1555,1563

This data sheet was drawn by William (Bill) Olsen in the mid 1960's. Supposedly he had seen a real one, then made this later from notes and memory. He used a 1916 data sheet for car 1145 as the basis which has features that did not exist in 1906. He made a number of copying errors. Much of the double deck information differs from the 1906 Street Railway Journal article. Thus I can't consider this data sheet reliable, especially "1145a 3-12 & 19-1908". However, assuming the 2'0" measurement at the front platform is correct, the length of the upper deck can be calculated as 39' 2 3/8" at the bottom sill plate and 38' 3 3/8" at the letterboard. (The bumper is 13" in length, so the inward curve of the front window posts is 11".)

ALO



Glass Gb6

CAR	Built	CAR	Rebuilt	MAKE	T.S.	AIR	Christensen	trolley Wheel 7"
1145	5-25-05	1145a	3-/28/9-08	Weight	90,900	Air Cyl	12"	Steel Under Frame
Clearance	17'-0"	2nd Floor	Removable	Width	9'2½"	J. Box	Symington	36" from Rail to Floor
Front	—	" " Seats	5 pass. Benches	Seats	+ only	Trucks	Baldwin #2	Removable Signs
Stairwell	—	Front Sashes-Fixed		Capacity	250	Brakes	inside hung	Width inside 8'2"
Fit	10"	Side	" OPEN	Exits	F & R	Wheels	6'4"	" of lower isle 28"
Tread	12"	top	–	Rear	Double	"	Steel 34"	Lum Ark Headlight
No. Steps	11	seating	59	Register	2-Double	Gears	51T. Cast Steel	RED Elec. Tail Light
Trolley base	T.S. #5	lower	–	Platform	8" drop	Gear Fit	6¼"	Double Floor
		Seating	50	Motors	4-GE 73	Pinions	24T. Forged Steel	Surbarban Car
			Total	75 HP per Motor		Trolley old	BASE G.E.-RB.	Experimental #12
Hand drawn	Special Form	I-A-15	1 car	Controller	C-6 with M type Cont.			Sheet No 23A

CAR BUILDING PROGRAMS

Office DEPOT.

CAR BUILDING AND REBUILDING PROGRAMS

This is a complicated subject as TCRT went through several design development periods intertwined with considerable experimentation, resulting in extensive rebuilding and modification programs. A flexible method of changing electrical and mechanical equipment among the cars at will was used extensively over the years. I am treating this subject by using several separate sections or chapters. This is the sequence of subjects in which the various sections will be arranged.

A. Cars built in the 31st St. Shops, Minneapolis. This is a listing of the various car orders, dates built, and car classification. Notes and comments are included.

B. Cars built in the Snelling Shops, St.Paul. This also is a listing of the various car orders, dates built, and car classification. Notes and comments are included.

C. Car Classification. This explains the classification system used and includes the construction specifications and measurements. Car construction costs are also included.

D. Rebuilding Programs. This lists the various programs with car numbers and dates, and revised construction specifications and measurements.

F. Electrical and Mechanical Equipment. A detailed explanation of the original equipment as built and most of the subsequent upgrades and changes made over the years. Weights of the cars as built and as revised over the years is included as a subsection.

E. Car Construction Exterior and Interior Details.

G. Individual Car Histories: one line per car with day-month-year dates for original building, each rebuilding, and final disposition.

H. Assignment of Cars to Car Stations 1909-1954.

I. Shop Records 1898-1954: a summary of revarnishing, repainting and rehabilitation dates from the Mechanical Department record cards. [redacted]

SUMMARY OF ALL CAR BUILDING PROGRAMS

Private Car			1 car
Class B-3	737-788,797-867,900-949; Duluth St. Ry. 151-162		185 cars
Class B-5	950-951		2 cars
Class C-3	868-899		32 cars
Class D-7	952-991; Duluth St. Ry. 163-177		55 cars
Class D-4	992-1041		50 cars
Class E-4	1042-1111 and 2nd 1043		71 cars
Class F-4	1112-1144		33 cars
Class G-6	1145-1220; Duluth St. Ry. 183-197		91 cars
Class H-6	1221-1290		70 cars
Class I-1	1291-1309; Duluth St. Ry. 198-203		25 cars
Class J-2	1310-1359		50 cars
Class K-2	1360-1379; Duluth St. Ry. 204-214		31 cars
Class K-8	1380-1485; Duluth St. Ry. 215-219		111 cars
Class L-8	1486-1855; second 1482-1485,1564-1566,1713,1716,1719, 1722,1724,1789-1792; Duluth St. Ry. 222-237,242-251, 257-262,271-278; M.A.&C.R.Ry. 1-2		428 cars
Class M-9	2000-2001		2 cars
Class N-9	2002-2003		2 cars
Class O-11	2004-2005		2 cars
Class P-11	2006-2030		25 cars
Duluth St.Ry. Incline Railway cars	163,220-221		3 cars
Lightweight Noiseless Electric Street Car Company			93 cars
Chicago Surface Lines		50 cars	
Twin City Rapid Transit Co.	Class P-10 1-4	4 cars	
Duluth St. Ry.	301-305	5 cars	
Grand Rapids Railroad		1 car	
Tennessee Electric Power Co.		20 cars	
Southern Indiana Gas & Electric Co.		13 cars	
Total Passenger Cars			1,362 cars
Service Equipment	3-5,7-25,29-38,43-56,58-59,61-70,72,75-82; Duluth St.Ry. 1/141,4/146; University of Minnesota Switch Car; St.Paul Southern Electric Ry. Work Car-Snow Plow		71 cars
Total Cars built			1,433 cars

Classes B-3 through L-8 constituted what was termed the Standard Passenger Car of which 1,234 cars were built. 1,140 cars were originally built for T.C.R.T. Co., 92 originally built for Duluth St. Ry., and 2 originally built for M.A.&C.R.Ry. The following table summarizes the disposition of the 1,140 T.C.R.T. Co. cars.

Rebuilt with front-exit doors		590 cars
Rebuilt for one/two man operation		81 cars
Rebuilt for special one/two man operation	1124-1128,1131	6 cars
Rebuilt for double-end operation	1129,1230	2 cars
Wrecked or Burned		18 cars
Sold		112 cars
Rebuilt to Service Cars		3 cars
Rebuilt to Trailers		26 cars
Sold for Scrap		243 cars
Dismantled and Burned		59 cars
Total		1,140 cars

Disposition of 590 "Front-Exit Gate Cars"

Rebuilt for one/two man operation	446 cars
Wrecked	2 cars
Donated to New England Electric Railway Historical Society	1 car
Rebuilt to Service Car	1 car
Bodies used as Storage Sheds, subsequently Sold	3 cars
Body Donated	1 car
Dismantled and Burned	136 cars
Total	590 cars

The last six categories total 144 cars which constituted all of the "front-exit gate cars" in use from 1943 to 1954.

1254,1266-1292,1329-1381,1383,1399-1401,1403-1407,1409-1414,1416,1418-1419,1421-1423,
1426-1429,1431-1432,1434-1436,1438-1439,1442-1445,1447,1452-1453,1455-1461,1463,1471-1472,
1474,1476-1478,1481,1483-1484,1486,1493,1514,1542,1547,1555,1563.

Disposition of 527 One/Two Man Operation Cars

Rebuilt from "Front-Exit Gate Cars"	446 cars
Rebuilt from Standard Passenger Cars	81 cars
	527 cars

Wrecked or Burned	12 cars
Donated to Minnesota Railfans' Association	1 car
Body Given Away	1 car
Bodies Sold	239 cars
Dismantled and Burned	274 cars
Total	527 cars

SHOP TRAILERS (Single-Truck)

31st St. Shops

February 1902: two Work Cars for the Track Dept.
March 1902: two Work Cars for the Track Dept.
March 1905: one Flat Trailer.

Snelling Shops

Eight trailers built from November, 1907, thru January, 1911.
Pavement Plow #71.
Seven Shop Trailers were listed in the January 1, 1922, Valuation: #84-#90.
Three Shop Trailers were added thru 1929: #91-#93.

TCRT CAR BUILDING QUANTITIES		31st St	Snelling	Total
Standard Passenger Cars				
Wood Underframe				
Built for TCRT: Pvt,737-788, 797-1111		368		368
Sold,Numbers repeated: 833-844,1043 (DSR 151-162,178)		13		13
Built for DSR: 163-177		15		15
Subtotal		396		396
Duluth Incline Car, Wood Underfrrame: 63		1		1
Steel Underframe				
Built for TCRT: 1112-1265		154		154
Built for DSR: 183-197		15		15
Subtotal		169		169
Total Standard Passenger Cars		565		565
Total Passenger Cars, 31st St Shops		566		566
Standard Passenger Cars				
Steel Underframe				
Built for TCRT: 1266-1855			590	590
Sold, Numbers repeated: 1482-1485,1564-1566,1716, 1719, 1722,1724,1789-1792. (DSR 238-241,252-254, 267-270, 263-266). 1713 (MACR 7).			16	16
Built for DSR: 198-219,222-237,242-251,257-262,271-278			62	62
Built for MACR: 1-2			2	2
Total Standard Passenger Cars			670	670
Duluth Incline Cars, Steel Underframe: 220-221			2	2
Lightweight Passenger Cars: 2006-2030			31	31
Total Passenger Cars, Snelling Shops			703	703
Total Passenger Cars, both Shops		566	703	1269
Lightweight Noiseless Electric Street Car Co. (*)			93	93
Service Cars				
3-4,7-25,34		22		22
5,29-33,35-38,43-56,58-59,61-70,72,75-82			45	45
DSR 141,146			2	2
UM Switch Car, StPSERy Snow Plow			2	2
Total Service Cars		22	49	71
Total Car Building		588	845	1433
(*) Built For:				
Chicago Surface Lines 3232-3261,6219-6238	50			
Grand Rapids Railroad 375 "Minnesota"	1			
Duluth St. Ry. 301-305	5			
TCRT Co., Stillwater 1-4	4			
Tennessee Electric Power Co. ,Chattanooga 131-140	10			
Tennessee Electric Power Co., Nashville 600-609	10			
Southern Indiana Gas & Electric Co., Evansville 401-413	13			

CARS BUILT in the 31st ST. SHOPS, MINNEAPOLIS

A new shop facility was completed in April 1898 at the 31st St. and Nicollet Ave. property in Minneapolis. This building was located on the southwest corner of the property, 32nd St. and Blaisdell Ave. S. It was also fully equipped for carbuilding with a capacity of eight cars per month. Upon completion of the facility three new cars were constructed.

1 car **Private Car** (for Thomas Lowry), May 1898.
Available records do not indicate a number for this car and photographs do not show a car number. The number 736 is unaccounted for and perhaps was reserved for this car. Newspaper report 7-17-1899: now building (sic) in the 31st St. Shops. [It was in the shops for electrical and mechanical equipment upgrading.] Probably will be the first car over the new Stillwater line. [It was.] Newspaper report 8-1-1899: has been running the last two days entertaining visitors. Has a toilet room, buffet, card room, large wicker arm chairs replete with cushions, carpeted floor, and hand-painted panels in the ceiling.

2 cars **737-738** May 1898. Class B-3.
TCRT's 1898 Annual Report stated that after every effort had been made to have a car manufactured to meet its requirements, it built two cars its own shops during 1898 and placed them in service. They proved so satisfactory that the construction of more cars was decided upon. The design was engineered by W. M. Brown, employed by TCRT for the previous seven years, the last three as Master Mechanic. The car was 41'7" long, plus a 9" buffing timber on the front for an overall length of 42'4". The body weighed 10 tons; the complete car 17 tons. (Another source: 18 tons.) The car seated 49 persons, or 51 persons if the hot water heater, located in the carbody proper, was removed. One car was fitted with experimental leather upholstered seats; however it was found that Hale & Kilbourn seats (rattan) were best in cold weather. The two cars went thru the shops in September 1898 when building the first order of cars was begun, probably for modifications as a result of the trial period, and these are the dates shown as the building dates on the data sheets and record cards.

20 cars **739-758** September-December 1898. Class B-3.
All of these cars were placed on the newly opened "Como-Interurban-Harriet" line.

14 cars **759-772** January 1, 1899. Class B-3.
16 cars **773-788** June-September 1899. Class B-3.
The first 14 cars were probably completed due to the immediate availability of trucks, motors and controllers [redacted] from just retired open cars; the cars were assigned to the "8th Ave. S. & Central" line, Minneapolis, and "Selby Ave." line, St.Paul. The 16 cars were completed later as new trucks, motors and controllers became available to upgrade the earlier-built equipment; seven cars (eventually 779-785) were specially equipped for the newly-opened "St.Paul-Stillwater" line in August-September 1899.

1 car **797** September 1899. Class B-3.
19 cars **798-816** June-August 1900. Class B-3.
The order was for 20 cars, 797-816, and the wooden parts were manufactured and assembled during 1899. However the iron and steeel parts, together with trucks and motors, could not be obtained until 1900. One car, 797, was able to be completed and placed in service during 1899 using spare equipment.

15 cars **817-831** July-August 1900. Class B-3.

28 cars **832-859** August-October 1900. Class B-3.
It was announced August 27, 1900, that the Duluth St. Ry. was to receive new cars from TCRT. Cars 833-844 then under construction were selected to become DSR 151-162. The remaining cars of the order were placed on important Minneapolis lines such as "4th Ave. So.", "1st Ave. So." and north side lines.

20 cars **2nd833-844; 860-867** April 1901. Class B-3.

32 cars **868-899** February-September 1901. Class C-3.
TCRT felt that large cars were not needed on all lines so decided to build these shorter cars. Most of this order went into service in St.Paul on the "7th St." and "Grand & Lafayette" lines. Cars 868-872 were assigned to the Stillwater local lines.

50 cars **900-949** May-November 1902. Class B-3.
This was the second group of cars to be equipped with airbrakes. (The seven cars assigned to the "St.Paul & Stillwater" line were the first.) All subsequent car orders were equipped with airbrakes. These cars were assigned to the "Interurban" and "Como-Interurban-Harriet" lines.

2 cars **950-951** April-May 1903. Class B-5.
These were experimental cars, the first with double rear gates and wider steps, plus front bulkhead sliding door to the front platform; all previous cars had none.

40 cars **952-991** May-September 1903. Class D-7.

50 cars **992-1041** April-June 1904. Class D-4.
From March through June 1904 new carbodies of this order were temporarily stored at East Side and Midway Stations.

1 car **1092** July 1904. Class E-4. Double-Deck.
This car was completed before work was begun on an earlier order for cars 1042-1091. It was a standard car modified for use as a double deck car in sightseeing service. A work order dated April 1904 authorized construction of one double deck car. In June 1905 additional costs were incurred for "double deck car 1092" which were most likely for erecting the canopy over the seats (see page 252). Also refer to my separate article on the history of double deck cars in the Twin Cities. 1092 was converted back into a standard single-deck car.

4 cars **7-10** November 1904. Work Car.

1 car **25** November 1904. Snow Plow.
This car was probably numbered 21 when built and re-numbered 25 about 1907 when one service equipment number series was adopted. March 1911: a folding tower with platform was installed on the roof for use also as a Wire Car. It was assigned to Owen St. Station on the Stillwater Division.

38 cars **1042-1079** November 1904-February 1905. Class E-4.
During October 1904 and January-February 1905 new carbodies of this order were temporarily stored at East Side Station. Car 1043 was sold upon completion in February 1905 to the Duluth St. Ry. as their 178.

12 cars **2nd1043; 1080-1090** February-March 1905. Class E-4.

6 cars **11-16** April 1905. Work Car.

20 cars **1091,1093-1111** ~~April~~ May-June 1905. Class E-4.

1 car **3** May 1905. Wire Car.
A work order dated April 1905 authorized the building of one Wire Car.

1 car **4** August 1905. Wire Car.
A work order dated June 1905 authorized the building of one Wire Car for St.Paul.

12 cars **1112-1123** August 1905. Class F-4. High-Speed Suburban Cars.
These were the first cars with steel underframes, fabricated for TCRT by American Bridge Company, Minneapolis. This entire order was built for the new "Lake Minnetonka" line. Cars 1116, 1117 and 1118, in that order, were the first cars to open the newly completed line in September 1905.

21 cars **1124-1144** September-November 1905. Class F-4.
This order was built for the "Como-Harriet" line with cars 1143-1144 fitted for use in "Como-Hopkins" service.

1 car **1** November 1905. Delivery Car or Supply Car.
A work order dated May 1909 covered altering "Supply Car 1" to a Baggage Car, at which time the number **34** was assigned, for service on the Lake Minnetonka Division.

1 car **22** February 1906. Snow Plow.

1 car **1145** May 1906. Class G-6. Double-Deck.
S.W.O. 8737 dated October 1905 was titled "Build one double deck Tonka car". Refer to my separate article on the history of the double-deck car in the Twin Cities for more details. This car was converted back to a standard single-deck car.

50 cars **1146-1195** May-August 1906. Class G-6.
TCRT reported they were planning to convert 30 cars to the double-deck type, but these 50 cars were built with the same heavy body construction used on 1145. The S.W.O. history on these cars is as follows.

S.W.O. 8745	November 1905.	Build 20 carbodies. (1146-1165) Changed to double-deck cars March 1906. Changed back to standard cars August 1906.
S.W.O. 8750	January 1906.	Build 20 standard carbodies. (1166-1185)
S.W.O. 8759	February 1906.	Build 10 double-deck cars. (1186-1195) Changed to standard cars August 1906.
S.W.O. 3379	August 1906.	Equip car 1146 with double deck. (Never done?) Later: Equip one car with double deck. Apparently refers to car **1160** which either got the upper deck without canopy from 1092 or had a similar one built as only minor amounts were charged to this work order. Refer to my separate article on the history of double-deck cars in the Twin Cities.

The double-deck cars were converted back to standard single-deck cars.
Many of these cars were assigned to the newly opened "Selby-Lake" line where they were geared for 35 m.p.h. Still faster gearing was used on other cars which were assigned to the "Lake Minnetonka" line as it was intended to have enough cars to provide for two-minute headway on Sundays, with additional cars of this group used as trailers.

25 cars **1196-1220** September-December 1906. Class G-6.

2 cars **23-24** January 1907. Snow Plow-Sweeper.

25 cars **1221-1245** February-April 1907. Class H-6.

3 cars **17-19** June-July 1907. Work Car.

20 cars **1246-1265** May-August 1907. Class H-6.

1 car **20** August 1907. Locomotive.
This locomotive was equipped only for third-rail current collection at the Main Steam Station, Minneapolis.

1 car **21** August 1907. Wrecker-Crane.
The crane mechanism was manually operated until 1910 when it was electrified by the installation of two 7½ h.p. motors.

Apparently all the steel underframes for cars built at the 31st St. Shops were fabricated for TCRT by the American Bridge Company, Minneapolis. The break between carbuilding at the 31st St. Shops and the Snelling Shops was based on the recollection of a TCRT shop superintendent. However the Construction Journals list work order S.W.O. 4090 dated May 1907 (when the first expenditures were incurred) for moving car underframes to the new shops. Later accounting entries indicate that all the costs of moving to the new shops were charged to this work order. Thus it is possible that part or all of the underframes for cars 1266-1290 were fabricated by American Bridge Company.

737-738 1898

Office DEPOT

Minneapolis Tribune (1867-1908); Jul 2, 1898;
ProQuest Historical Newspapers Minneapolis Tribune (1867-1922
pg. 5

STARTED ON TIME

NEW COMO INTERURBAN CARS PUT IN OPERATION.

Twin City Rapid Transit Company Promised to Inaugurate the Service July 1, and It Kept Its Word—The New Route the Most Picturesque in the Twin Cities—Officers of the Company, With Invited Guests, Make the Initial Trip—Business on the New Line Commences at Once.

The new Como interurban service of the Twin City Rapid Transit Company is now opened, and the traveler between the two cities may take his choice of routes. The officers of the company had promised that the service would be inaugurated July 1, and they kept their word. There is a little work yet to do in the way of adjusting trolleys and ballasting tracks, but the line is open for business, and is getting plenty of it.

The first car to make the trip from Minneapolis to St. Paul started from Washington and First avenues south at 2 o'clock yesterday afternoon. It was car No. 738, one of the new summer and winter cars built by the company expressly for the new interurban line. Every window was "stowed," so to speak, and the car was as open to the cool breezes as one of the regulation open cars. The leather upholstering looked invitingly clean and comfortable, and in every respect the cars are what the company claims for them, the finest ever put into service on a street railway line. Not all the cars are finished in leather, however; some are finished in serviceable and equally sanitary cane.

738

The car was under the immediate care of H. C. Kuchenbecker, general instructor of the company; W. J. Alexander acted as conductor, and Thomas Hartin handled the motor. Among the gentlemen who made up the party which made the initial trip were Thomas Lowry, president of the company; C. C. Goodrich, vice-president; Willard J. Hield, general manager; George R. Folds, amusement manager of the company; C. F. Holmes, general manager of the Metropolitan Traction Company of Kansas City; D. B. Dean, of the street railway service, Chicago; R. J. Mendenhall, and G. C. Hartley, of the Duluth Street Railway Company; Judge M. B. Koon, F. G. James, secretary of the Minneapolis Improvement Company; City Attorney Frank Healey, ex-County Attorney Frank M. Nye, W. J. Murphy, and others.

The run to Como Park was without accident or special incident. The track was unusually smooth for new work, and the car rolled along as gently as it might over the oldest and best ballasted section in either city. The long and heavy rails are accountable for the excellence of the roadbed on this, the opening day.

At Como the car was run around the circle which all the cars on their eastern trip will make. It was stopped at the pavilion, while the party, in company with a car load of members of the St. Paul Commercial Club, who were making a trip over the line as guests of Supt. D. S. Smith, went over to the lake to investigate the refreshment stand.

After half an hour spent in the park the St. Paul party resumed the journey to Minneapolis, and the Minneapolis car proceeded to St. Paul. The tracks were not reserved for the special cars by any means. As soon as the special car had left Minneapolis on its outward trip the regular cars began running on schedule time, and the car with the president and other officials of the road had to take its place in the procession of cars which were circling the new route. On the return trip at many places along the line were men and women waiting to go somewhere on the new interurban, and the second car over the line had a goodly load of passengers. Business began as soon as the cars began to run.

The company is preparing to take care of the crowds which are expected to visit Como Park. The loop has been improved in many details, and as was said above, all the cars on the trip to St. Paul will make a complete circuit of the loop; on the trip from St. Paul to Minneapolis they will go around three sides of the loop, giving the passengers from either direction a chance to alight at the nearest point to the lake and the pleasure grounds. The company has erected a large and handsome waiting room and pavilion at the higest point on the loop, and has floored a large space between the pavilion and the track. There will be plenty of shelter in case of stormy weather.

The new cars will be run on a 15-minute schedule for the present. The Como Interurbans may be told from the old line cars by the illuminated lettering in the end which is "Como Int.," and by the side signs which read "Como Interurban Harriet." Cars with that lettering will run from Lake Harriet to St. Paul, returning to Lake Harriet. Besides these cars will be the "Como Int." short cars, which will be run as the demands of business warrants. These cars will circle the loop in this city the same as the cars of the other interurban. All the cars of the new interurban line will use the East Side barns, not the West barns, as the Lake Harriet cars have been doing. In a few days all these slight changes will be learned by heart, and there will be no occasion for misunderstandings or disappointments.

The prettiest and most satisfactory ride in the two cities will be by the new interurban line.

FINE NEW CARS
Minneapolis Tribune (1867-1908); Jun 16, 1898;
ProQuest Historical Newspapers Minneapolis Tribune (1867-1922
pg. 7

FINE NEW CARS

TWIN CITY RAPID TRANSIT COMPANY HAS ORDERED THEM.

Service in the Twin Cities Being Improved Constantly, Even Though It Is Now the Best—The New Cars Are Seven Inches Longer Than the Interurbans, and of Excellent Construction Within and Without.

Although the Minneapolis street car service compares favorably with that of other cities the Twin City Rapid Transit company appears not to be content to rest with that, but continues improvement in every possible direction. Master Mechanic W. M. Brown, of the shops at Nicollet avenue and Thirty-first street, says that an order has been given by the company for the construction of 20 new cars. These cars are to be seven inches longer than the present Interurban cars. It is thought that the company contemplates the gradual substitution of these large cars in place of those now in use, until, within three or four years, all the small cars will be replaced.

Two of the large cars are already done, and they are very fine. The chairs are nicely upholstered with cane or leather, and there is a general appearance of more finish. The windows are so arranged that they can be opened and closed with greater security and ease than on the present cars. There will be electric lights on the sides, as well as on the ceiling of the cars—20 lamps to the car. A number of motor armatures and casings are done and waiting for the cars. There are eight of these fine cars now being constructed. The bed of the car is being girded and braced somewhat differently than heretofore, and it is expected that the vestibules will no longer sag downward, as they do on the Interurban cars.

A feature of additional interest in connection with this improvement it that all the work is being done in Minneapolis. The plans were made here and every part of the wood and metal work has been turned out by the company's shops.

Minneapolis Tribune (1867-1908); Jul 24, 1898;
ProQuest Historical Newspapers Minneapolis Tribune (1867-1922)
pg. A12

ITS FIRST TRIP

NEW OBSERVATION CAR IS A MODEL IN ITS LINE.

Carried a Jolly Party This Morning to Lake Harriet, Minnehaha and Como—Seats Sold in Advance, and There Was No Complaint About Crowding—Car Is a Splendid Piece of Workmanship—Should Become Very Popular—Windows Arranged for Storm Protection—View Is Unobstructed at All Times.

Smooth and swift, airy and polished to the popular airs of an electric orchestra, the first observation car on the lines of the Twin City Rapid Transit company skimmed over the tracks this morning on a 40-mile run.

There was nothing ostentatious about the start. There were no members of the corporation, prominent citizens or any fuss and feathers. Tickets had been placed on sale, and the start was made at 9 o'clock from the West Hotel, with only a few on board. It had been generally believed that the start would be an invitation affair, or there would have been more on board. However, those who took in the first trip were delighted, and before the full round had been made the car was well filled.

These tourist trips should become very popular with the people, and later it is thought they will be run more frequently. The present plan is for one trip, starting from Washington and Hennepin at 8:45 a. m., and one at 7 p. m. The tickets are on sale at the Hotel Nicollet, West Hotel, and at the starter's office. The car runs to Lake Harriet first, and it is so arranged that if it is too early, the car can be caught on the return trip, or if it is missed at Lake Harriet by any of the tourists, their ticket is good on any car to the city so that they can catch the car again.

The car itself is a splendid piece of workmanship. It is large, wide and roomy, finished in hard woods, with arrangements for electric heating. The windows are very large, and are covered by screens of three inch patterned meshing of painted steel, giving plenty of circulation. For storm protection, the windows slide down in two sections into the walls of the car, and are hidden by a false polished cherry sill. They can be readily raised, and the car thus made tight from wind or rain. In winter the steel screens lift out, and an outside window is fitted in so that there is double glass, and consequently no frost on the panes, so that a view is unobstructed. The glass sign on the car front reads, "Chartered Car," and the side signs read, "Seeing the Cities."

The start was made this morning just in front of a Lake Harriet car, giving 15 minutes in which to make more rapid time, arriving at Harriet just after the car in front. A 15 minute stop was made there, and then came the run back 15 minutes faster than the regular run of lake cars. At the West hotel Col. West and party boarded the car for the rest of the trip, and the splendid car whirled away toward Minnehaha. Here was another fast run, and there was a wait of 20 minutes at the falls, long enough for tourists to get a sight of the laughing water. Here a few more with tickets boarded the car, and back again it went to the city. Arrived at the loop there were more passengers, and the car was well filled. Over the river it went via the new Como line, and out along the new tracks to Como, where there was a half hour stop.

The run to St. Paul was made in a hurry, and out around the loop, and then back again to Minneapolis over the old Interurban line. It was a glorious run, without a mishap or miscalculation, and was enjoyed hugely by the party. These tourist runs are entirely cosmopolitan. Tickets are for sale three days ahead, and each ticket is good for one seat, which is numbered with a corresponding number on each ticket. There is no such thing as a crowd, as but 47 people can ride at once. Parties can be made up, and can take the trip, knowing that by buying the whole number of seats they will not be bothered with any outsiders on the trip. It makes a beautiful run, and will certainly be popular for trolley parties, as well as for people who are in the city for a day or so, and want to see both cities.

WILL SHORTEN THE DISTANCE
Minneapolis Tribune (1867-1908); Nov 24, 1899;
ProQuest Historical Newspapers Minneapolis Tribune (1867-19
pg. 7

WILL SHORTEN THE DISTANCE

STREET RAILWAY COMPANY PROPOSES TO BE OBLIGING TO ITS PATRONS.

Steps on the Big New Cars Are to Be Brought Down Nearer to the Earth's Level—First Move in That Direction Will Be a Lowering of the Bodies of the Cars—Mathematical Deductions Which Seem to Fit the Case to a T—Other Solutions of a Difficult Problem.

Relief is to be afforded those people who have complained that the steps on the 1899 street car is too high for comfort and convenience, and if the mountain cannot come to Mahommed, Mahommed proposes to go to the mountain.

Big cars need big wheels. The wheels of the new, modern and unusually large chariots which convey the public hither and yon, are 33 inches—almost three feet—high. And big wheels are best whirled by big motors. So the floor of the new cars are 40 inches above the street. This height will be decreased as soon as possible, at least two inches. It was not supposed, when the cars were manufactured, said a representative of the Twin City Rapid Transit company yesterday, that the car floor would be exalted. The car "bodies" were constructed independently, in a way, of the trucks and the motors. When the happy combination was at last effected it was found to be more striking than accessible.

Patrons having complained about the height of the steps, the car floors will be lowered. That will make the lower step 16 inches, instead of 18, from the ground. Afterward the situation will be still more improved. Exactly how cannot be told. The company will compare and cogitate. Perhaps the present two steps will be placed somewhat farther apart. The top step is now 11 inches from the car floor. The bottom step is 11 inches from the top step and 18 inches above the ground. If the length of each step were increased from 11 inches to 12 2-3 inches, after the car floor has been lowered from 40 to 38 inches, that distance between the floor and the ground could be traversed in three steps of equal size. The lower step would then be less than 13 inches from the pavement, which is palpable relief from 18 inches. Or perhaps a short folding step will be added below the present bottom step.

A third step, however, would necessarily be a folding step. The steps now intersect the platform floor at the very edge of the car door. If a third step were added below, and the upper step set back a corresponding distance, passengers would fall out of the door. That would excite comment. And if the lower step were attached rigidly to the existing lower step, the new round in the ladder of transportation would project beyond the side of the car sufficiently to catch Aguinaldo. Yet a folding step, to be unwrapped and tucked away each time by the opening of the car gates, will create, says the company, a mechanism that may not run, when the snow drops fall, quite as smoothly as untru

love.

MPLS. TRIBUNE 6-25-1900

NEW CARS GIVEN A TRIAL

Handsome Rolling Stock Is Put Out by Rapid Transit Company.

Six of the new street cars which the Twin City Rapid Transit company has just completed in its Minneapolis shops, were given their initial trial on the Interurban line yesterday.

Those who had the pleasure of riding in these new palaces of convenience had nothing but words of praise for the new equipment. Every detail for the comfort and convenience of passengers has been attended to and in every respect the new cars are a model.

One of the notable improvements is the lowering of the step. This will make it much easier to board the cars. The rear end of the car is provided with side seats, thus giving the car a greater capacity than those with only cross seats.

Another excellent idea is the electric bell between each seat, by which the conductor's attention can be attracted and he in turn can give the signal to stop to the motorman.

The new vehicles, resplendent in their fresh paint, attracted much attention, and will, it is believed, prove popular with the public. They are numbered in the 800's.

Data Sheets

6-22	812
6-23	810, 813
6-26	809
6-27	807, 808
6-28	811
6-29	800

CAN'T DO IT
Minneapolis Tribune (1867-1908); Mar 28, 1901;
ProQuest Historical Newspapers Minneapolis Tribune (1867-1922)
pg. 7

CAN'T DO IT

General Manager Hield, of the Street Railway Co., Talks to the Aldermen.

Explains Why Certain Orders Regarding New Cars Cannot Be Obeyed.

W. J. Hield, general manager of the Twin City Rapid Transit company, had an interesting session with the council committee on railroads yesterday afternoon.

The committee ordered him to put big cars on the Bloomington avenue line, and to decrease the time limit between the cars on the Western avenue and Second street northeast; on the Lyndale avenue and Monroe street, and on the Hennepin avenue to Thirty-first street lines.

And then, when he suavely told the committee he would find it impossible to do these things because the company had not the cars wherewith to do them, the committee very carefully explained that it did *not really mean it, but that the orders* issued to him by the city council merely meant that it would like to have him do things as soon as he could.

MAKES AN EXPLANATION.

Then the genial manager entered into an explanation of how some things were done, and why some things are not done.

"I don't know that the information will interest you," said Mr. Hield, "but it is a fact that every big car that rolls by this city hall represents $6,000 in cold cash, and we have to stop and think some before we build a flock of them.

"But there are now over 100 car bodies lying in the shops, where they have been waiting, some of them 90 days, for the motors and trucks, which have just begun to arrive this morning.

"As soon as these big cars are mounted they will be put out; but I cannot promise that they will be put on the Bloomington avenue line, for I don't know where they will go, and as for increasing the number of cars on the other lines, I could not do it at this time if you had a warrant out for me, because we are using every bit of rolling stock we have.

TREATED PRETTY NICE.

"And at that Minneapolis is being better treated than St. Paul, which has but one well equipped line, the Selby, while Minneapolis has the Camden Place-Washburn Park, the Eighth and Central, and the Hennepin and Twentieth lines of big cars, to say nothing of the two Interurban lines. And all the 100 big cars waiting for wheels and motors will be used in Minneapolis.

"But it will be 60 days before any change for the better is made, and I agree with you that at certain times in the day the cars on some lines are greatly congested, but we are just as anxious to overcome this difficulty as you are."

USES OF THE PRIVATE CAR

Minneapolis Tribune (1867-1908); Jun 22, 1901;
ProQuest Historical Newspapers Minneapolis Tribune (1867-1922
pg. 7

SEEING THE TWIN CITIES

PARTY OF CANADIAN CAPITALISTS INSPECT STREET RAILWAY SYSTEM.

They Have Recently Purchased Stock and It Really Was a Junket.

A party of Canadian capitalists, many of them heavy stockholders of the Twin City Rapid Transit company, arrived here yesterday over the Soo. Among the visitors are B. E. Walker, general manager of the Canadian Bank of Commerce; T. G. Brough, of Toronto, general manager of the Dominion bank; W. T. White, general manager of the National Trust company of Toronto; Charles Hayden, of the New York Stock Exchange; W. H. Goadby, New York Stock Exchange; J. Lorne Campbell, president of the Toronto Stock Exchange; A. E. Wallace, manager of the Atlas Loan company, of St. Thomas, and W. S. Cassells, E. A. Case, E. R. Wood, A. E. Ames, T. O. Anderson and G. T. Fergusson, all members of the stock exchange of Toronto.

While several of the visitors are heavy holders of stock of the Twin City Rapid Transit company, this is the first time they have made a personal inspection. The recent interest developed in the property by Canadians led to a desire on the part of these gentlemen and their financial associates to look over the system. Mr. Lowry was notified of this desire on the part of the Canadians several weeks ago and he at once notified them of his willingness to show them over the property.

BOARDED PRIVATE CAR.

Breakfast was served on the train and subsequently the private car of Mr. Lowry, with Vice-President Goodrich on board, picked the party up for a tour of the principal points of interest in Minneapolis. The visitors were shown over the power houses and shops, took a trip to Lake Harriet and generally made a brief inspection of the lines in this city. In the afternoon Messrs. Lowry and Goodrich accompanied the party to St. Paul, where a similar round was made. Today there will be a run to Stillwater.

J. Lorne Campbell, of the Toronto Stock Exchange, stated that the trip was purely one of investigation and inspection, and that it had no direct bearing on the recent heavy Canadian investments in T. C. R. C. stocks.

"There is no likelihood whatever," he said, "that the control of the property will pass out of its present hands. We are here to look around and get ideas on rapid transit for future reference."

One of the visitors, who has been a holder of T. C. R. C. stock for many yer-

that this was the first opportunity he had had of seeing what his money was invested in, but so far as he was concerned he would have been quite satisfied had no such opportunity occurred.

GUIDED BY FIGURES.

"The fact is," said this sagacious investor, "that figures are the best guide. A man may personally investigate a property and be impressed so strongly with its excellence as an investment that his enthusiasm may override his judgment. Financial statements are cold hard facts that tell the investor all he needs to know of his investment.",

After the morning ride lunch was served at the Minneapolis club, both Mr. Lowry and Mr. Goodrich being present.

Minneapolis Tribune (1867-1908); Jun 24, 1902;
ProQuest Historical Newspapers Minneapolis Tribune (1867-192
pg. 2

FIRST FUNERAL CAR USED IN TWIN CITIES

TWIN CITY RAPID TRANSIT COMPANY WILL NOT KEEP IT UP.

Body of Mrs. Williams Brought From St. Paul to Lakewood as a Personal Courtesy.

What was probably the first funeral car ever put upon the street railway tracks in Minneapolis or St. Paul was used Thursday for the funeral of Mrs. Clara William,s which took place from the home in St. Paul, interment being at Lakewood cemetery, Minneapolis.

Mr. and Mrs. Williams were close friends to Attorney Munn of St. Paul, who represents the Twin City Rapid Transit Company, and because of this friendship Thomas Lowry, in order to make the long journey from the home in St. Paul to the cemetery on the shore of Lake Colhoun less painful to the funeral party, tendered the use of his private car. The offer was gratefully accepted, and at a point on the Selby avenue line the casket was placed in the car, the funeral party boarded it, and at the Lakewood gate a hearse and carriages were in waiting to convey the remains and the mouners to the grave.

While in this instance a funeral car was used between the house and the cemetery, Manager Heild explains that it was used only because of the close personal relations existing between the friends of the deceased and the management of the road, and that there is no intention and practically no necessity for the establishment, as an institution, of a funeral car in the Twin cities.

Upon several occasions, where the funeral has taken place from a home or church on a street car line, the casket has been conveyed to the cemetery in a hearse, while the funeral party has taken a chartered car, but this is as far as the management of the road will probably go toward placing a funeral car on its lines for several years to come.

Traction Line Magnates Stop Here on Long Tour
Minneapolis Morning Tribune (1909-1922); May 22, 1912;
ProQuest Historical Newspapers Minneapolis Tribune (1867-1922)
pg. 11

Traction Line Magnates Stop Here on Long Tour

Members of Two National Associations See Minneapolis From Street Car.

Network of Trolley Railways Is Predicted for the Northwest.

A score or more members of the National Electric Railway association and Electric Manufacturers' association stopped in Minneapolis yesterday on their 1,100-mile trip over the United States. The visitors were headed by Thomas N. McCarter of Newark, N. J., who is president of the Electric Railway association. Mr. McCarter and his party were met at the union station by Horace Lowry and A. W. Warnock of the Twin City Rapid Transit company.

Mr. Lowry took the party to Lake Minnetonka in his private car. Praise for Minneapolis, her lakes and parks was given freely by the visitors, and when they reached Minnetonka all agreed that it was the beauty spot of the Northwest.

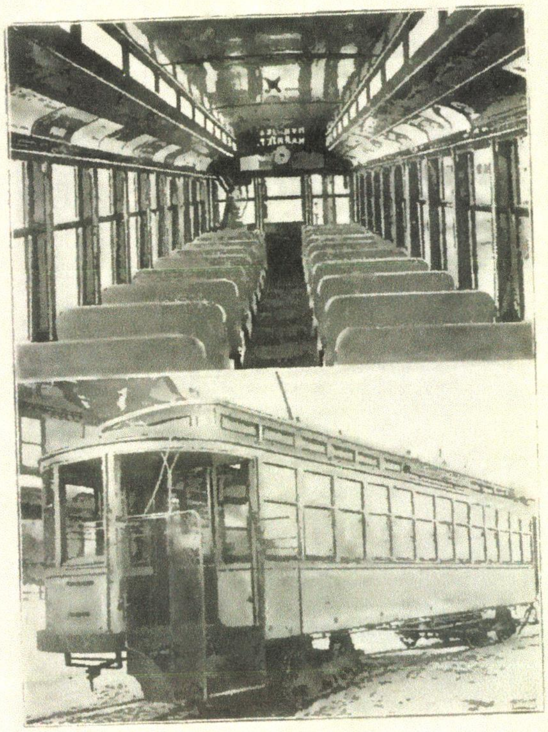
Party Taken to St. Paul.

Following the trip to the lakes the party was taken to St. Paul and given a comprehensive view of all of the property owned by the Twin City Rapid Transit company. The return was made by Como park and the guests were entertained at luncheon.

The visit of the railway men is regarded as being of great significance. That they regard it so is explained by their president. "We have planned this trip in order that we may get more closely in touch with the various chapters of our organization," he said.

The party visited the Far West and enjoyed trips through the Rocky mountains and side trips to the summer resorts on the Pacific slopes. According to notes made on the trip, the electric railway is rapidly becoming one of the most important factors in modern civilization.

Among the officers who are in the party are: Thomas N. McCarter of Newark, N. J., president; George H. Harris, Chicago, first vice president; Charles N. Black, San Francisco, second vice president; C. Loomis Allen, Syracuse, third vice president, and Charles L. Henry, Indianapolis, Ind., fourth vice president.



VIEWS OF STANDARD CAR.

ST RY REVIEW FEB 1899

The new cars, which are very fully shown in the accompanying illustrations, are regarded with considerable pride by the officers of the company, who feel that no road has any better cars. The greatest care is taken in the selection of material and in the construction, and the aim has been to build the best car possible.

These cars are designed for both summer and winter service; the window sills are but 27 in. from the floor and the two sashes may be slipped down into the side of the car, making practically an open car. The length, as shown in the floor plan, is 41 ft. 7 in., and at the front end is added a buffing timber (bent to conform to the car end) 9 in. thick at the center line of the car. This makes the total length 42 ft. 4 in. The weight of the body is 10 tons; with trucks and motors, 17 tons. The long sills are of Oregon fir, $4\frac{3}{4}$ in. by $6\frac{3}{4}$ in.; steel plates $\frac{3}{8}$ in. by 5 in. are let into the side sills; the short sills are of oak. The ends of the car are rounded, and both are vestibuled. There is but one entrance, and that is protected by gates of the type described elsewhere. There are two steps, each $11\frac{1}{2}$ in. high, to reach the platform; the steps are of the Stanwood type, made by the Q & C Company.

Over the trucks are two cross trusses (shown in the section CD) spaced 3 ft. 5 in. between centers. These are of $\frac{7}{8}$ in. x 5-in. steel. Between these, to receive the center bearing, is a beam built up of

CONTINUED ▶

ST RY REVIEW NOV 1899

CAR BUILDING IN MINNEAPOLIS.

The Minneapolis Times recently contained the following complimentary notice of Master Mechanic Brown, of the Twin City Rapid Transit Co.:

"The cars of this company are being built at its shops, 31st St. and Nicollett Ave., and were designed by W. M. Brown, the company's master mechanic, and are being built under his direction. Mr. Brown has been with the company for nearly ten years, and for about five years has been master mechanic. All new cars and the rebuilding of all the old cars and motors has been done under his direction. Mr. Brown takes second rank to nobody as designer and car builder and the company acknowledges his ability as a street car man by the confidence it places in his ability to manage this, one of the largest departments of its system. His work speaks for itself and one has only to look through Mr. Lowry's private car to be convinced of the truth of this assertion."

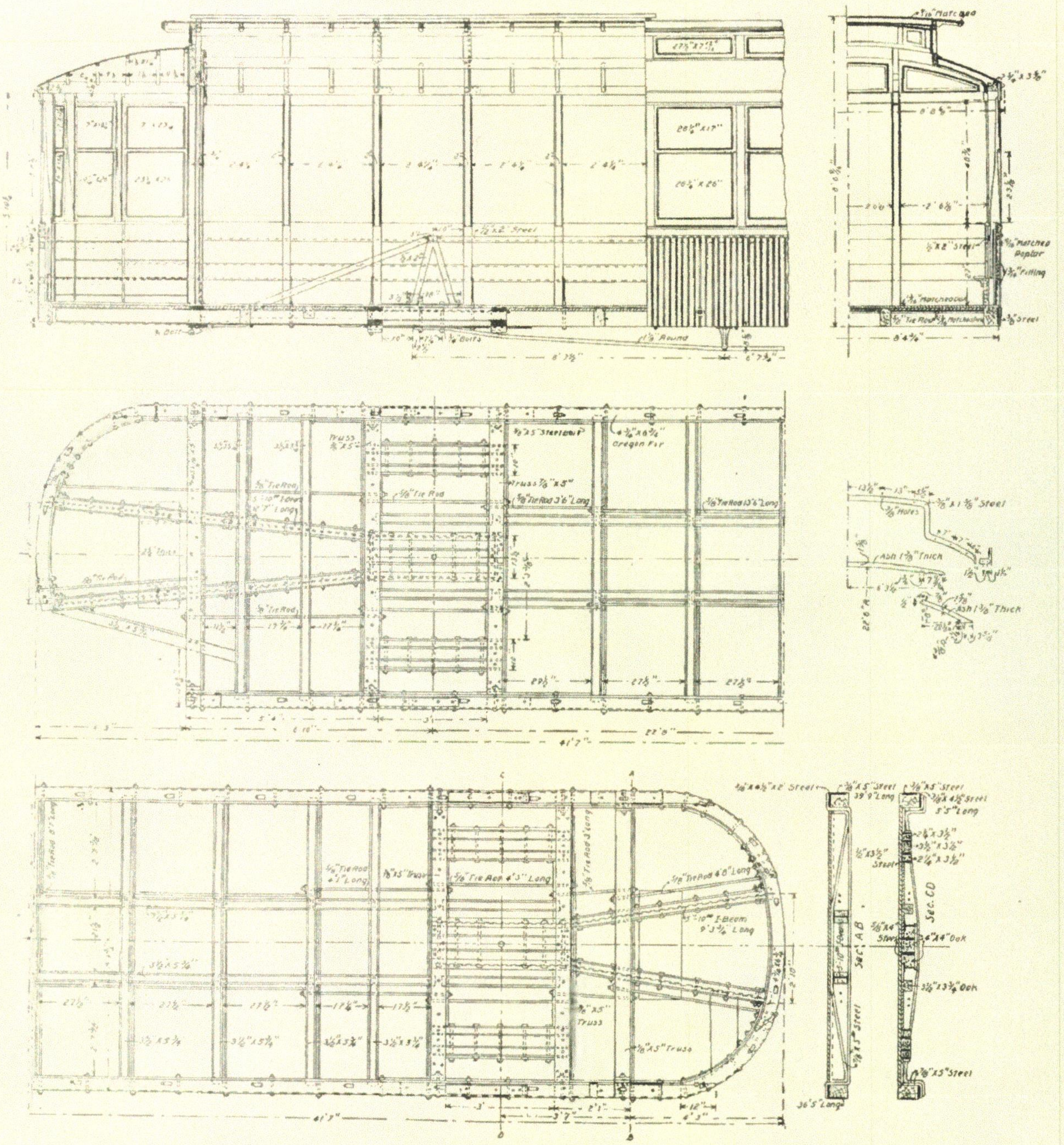
◆ ◆ ◆

three pieces of oak 4 in. x 4 in., two steel bars ⅝ in. x 4 in., and portions of two 5 in. I beams (which support the vestibule ends). Over the side bearings are similar longitudinal pieces built up of three oak pieces and four steel bars ½ in. x 3¾ in. A third cross truss (shown in section AB) is placed under each end of the car body proper. From the innermost truss to the curved platform sill are two 5-in., 10-lb. I-beams; between the inner cross trusses the lower flanges of these I-beams are cut away to reduce the total height of the trusses. Oak filling pieces are placed on each side of the I-beams, as shown in section AB. In each side of the car is a steel truss of ½ in. x 2 in. steel, as shown in the longitudinal section, and the two side sills are further trussed with 1⅛-in. rods.

The posts, water tables, and rafters are of southern white ash; the plates are of Oregon fir; the flooring is double, 13-16-in. matched oak on top of 13-16-in. matched pine; the roof is of poplar, covered with No. 6 canvas; the outside sheathing is of poplar, the inner sheathing of 1-in. white oak; the inner finish is of northern red birch, except the ceiling, which is quartered white oak. The details of the rafters are shown in the drawings, and also the details of steel rafters placed at four of the posts to give additional strength to the monitor roof.

This car seats 49 or 51 persons according as the heater is or is not in place. As an experiment one car was fitted with seats upholstered in leather, but the Hale & Kilburn rattan seats were decided upon as preferable, particularly for warm weather. The seat arms are brass, and were cast in the shop, as were also all the fittings.

The car is heated with the Baker hot water heater, and lighted by 20 electric lamps. Electric headlights of the company's own design are used.



SECTIONS AND FLOOR PLAN OF CAR.

TWIN CITY LINES

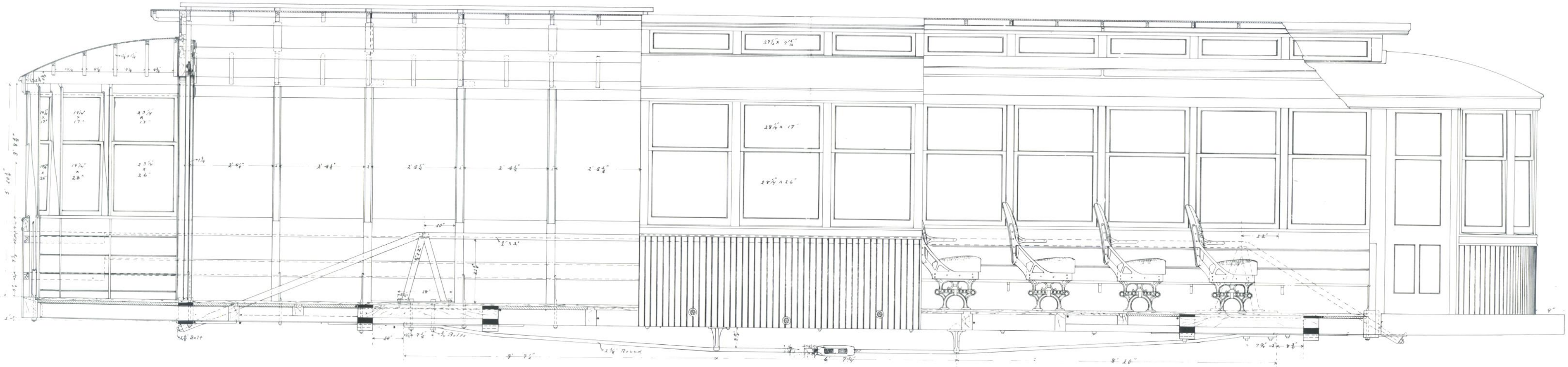
~~STANDARD~~ DOUBLE TRUCK CAR

Oct. 6.–1898

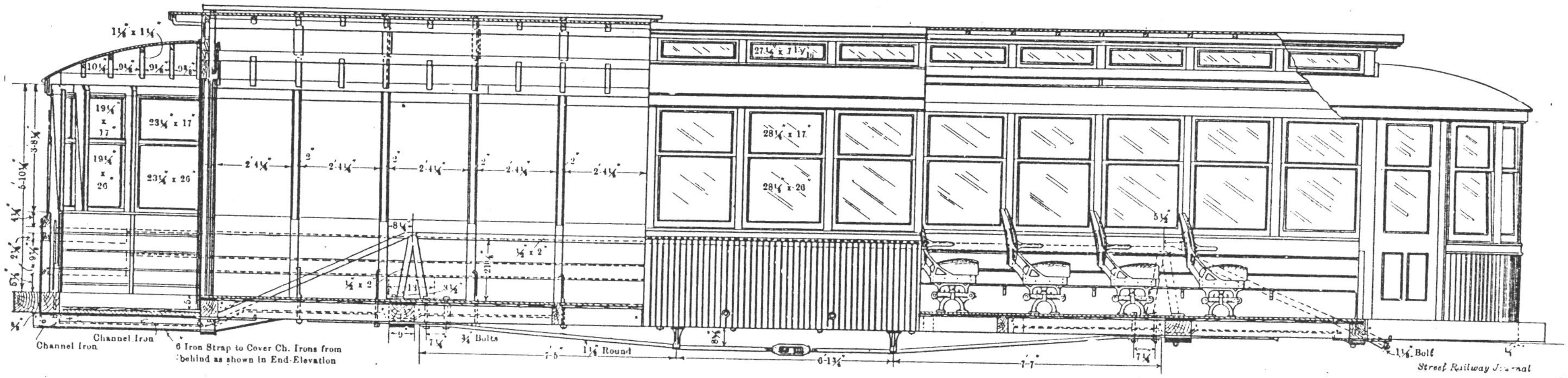
Scale 1"=1'

ELEVATION and SECTION.

[illegible] NO. 3

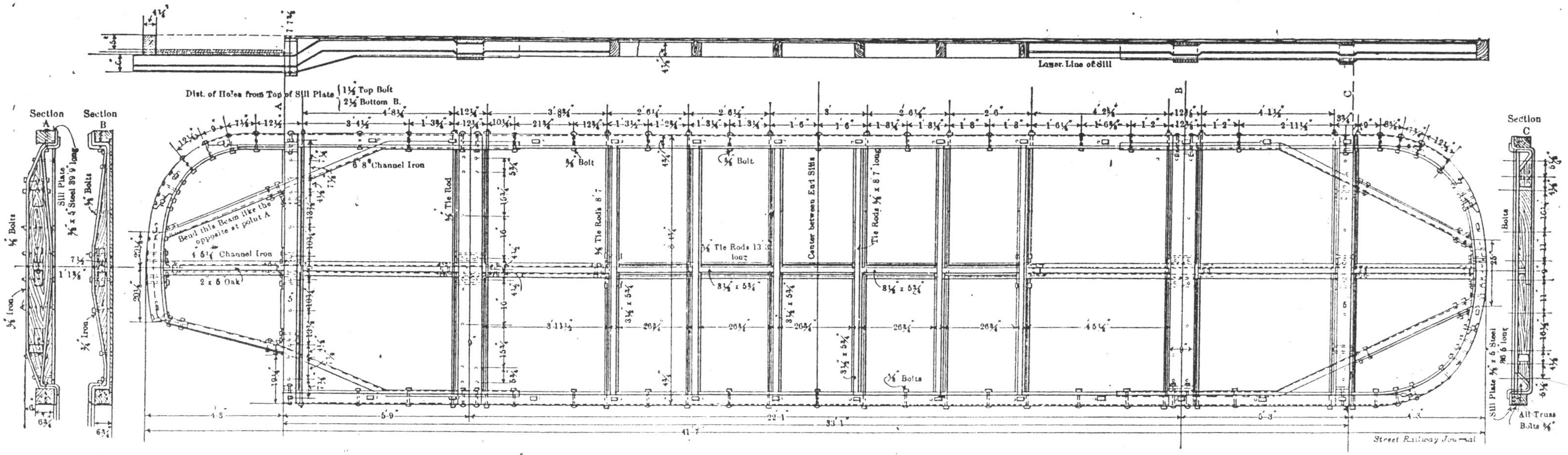


27½" x 7 15/16"
28¼" x 17"
28¼" x 26"
2' 4½"
2' 4½"
2' 4½"
2' 4½"
2' 4½"
2⅜" Round
8' 10"



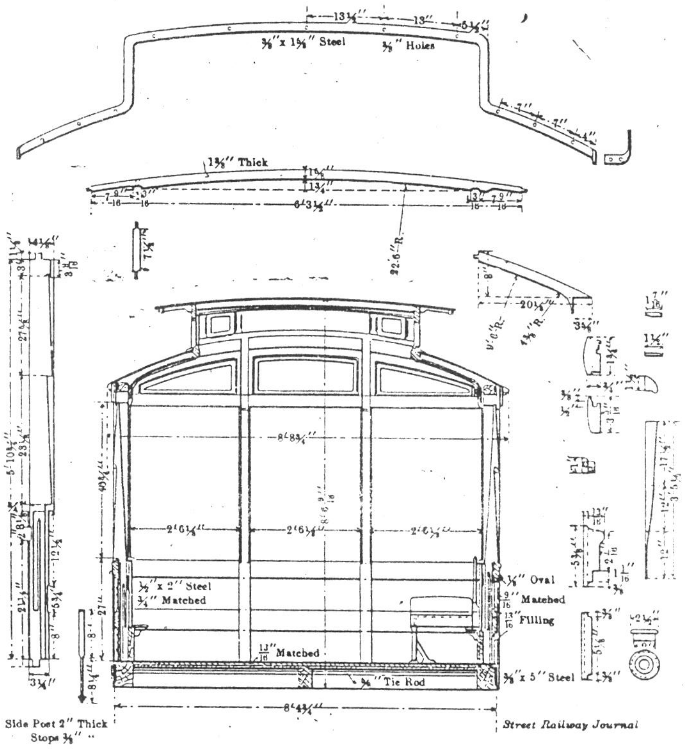
1¼" x 1¼"
10½
9¼
9½
9½
19½ x 17
23¼" x 17
19½ x 26
23¼" x 26
2' 4¼"
27¼" x 11⅛"
28¼" x 17
28¼" x 26
¼ x 2
21⅛
5½
3⅝
Channel Iron
6 Iron Strap to Cover Ch. Irons from behind as shown in End-Elevation
¾ Bolts
1¼ Round
7-5
6-13¼
7-7
1¼ Bolt
Street Railway Journal

ELEVATION, PARTLY IN SECTION, OF STANDARD DOUBLE-TRUCK CAR



Section A
Section B
Section C
Dist. of Holes from Top of Sill Plate
1¼" Top Bolt
2⅛" Bottom B.
Lower Line of Sill
8" Channel Iron
Bend this Beam like the opposite at point A
4" 6¼" Channel Iron
2 x 5 Oak
Sill Plate ⅝" x 5" Steel 39' 9" long
⅝" Bolts
⅝" Iron
⅝" Tie Rod
⅝" Bolt
⅝ Tie Rods 8' 7"
⅝" Tie Rods 13' 3" long
Center between End Sills
Tie Rods ⅝" x 8' 7" long
8¼" x 5¾"
3¼" x 5¾"
⅝" Bolts
Sill Plate ⅝" x 5" Steel 36' 6" long
All Truss Bolts ⅝"
4-5
5-9
22-1
33-1
41-7
5-3
6¾
Street Railway Journal

FLOOR SPACE OF STANDARD DOUBLE-TRUCK CAR



Street Railway Journal

TRANSVERSE SECTION AND DETAILS OF STANDARD DOUBLE-TRUCK CAR·

TCRT-BUILT EQUIPMENT

Compiled from Minneapolis Tribune Articles

11-17-1899: Passengers were complaining about the steps being too high for comfort and convenience boarding and alighting. Steps were 19" from the ground. 11-24-1899: The company was looking into lowering the car floors so that the lower step would be 16" from the ground instead of 18".

1-19-1901: New signs are being experimented with. They are made of transparent cloth, and behind them is placed a row of incandescent lights. Bearing half-a-dozen names, the cloth works on a roller so that the streetcar name can be changed instantly. The new signs are not very good to look at, but this is a defect that general manager Hield expects to remedy.

3-28-1901: "There are now over 100 carbodies lying in the shops where they have been waiting, some of them for 90 days, for the motors and trucks, which have just begun to arrive this morning", general manager W. J. Hield. Large cars are now in use in Minneapolis on Washburn Park & Camden Place, 8th Ave. S. & Central, Hennepin Ave. & 20th Ave. N., Interurban, Como-Interurban-Harriet lines, and in St.Paul on the Selby Avenue line. The 100 new cars will all be used in Minneapolis.

11-25-1902: Stillwater; the street railway company has placed a number of new cars on the local lines, being a decided improvement over the old ones, which had practically outlived their usefulness before being brought to Stillwater from Minneapols and St.Paul.

12-27-1902: W. M. Brown, formerly master mechanic of the street railway, and designer of the company's large cars, left for Los Angeles Christmas night to take a position with a large lumber concern in that city. He was ten years with the street railway, four of which he was master mechanic.

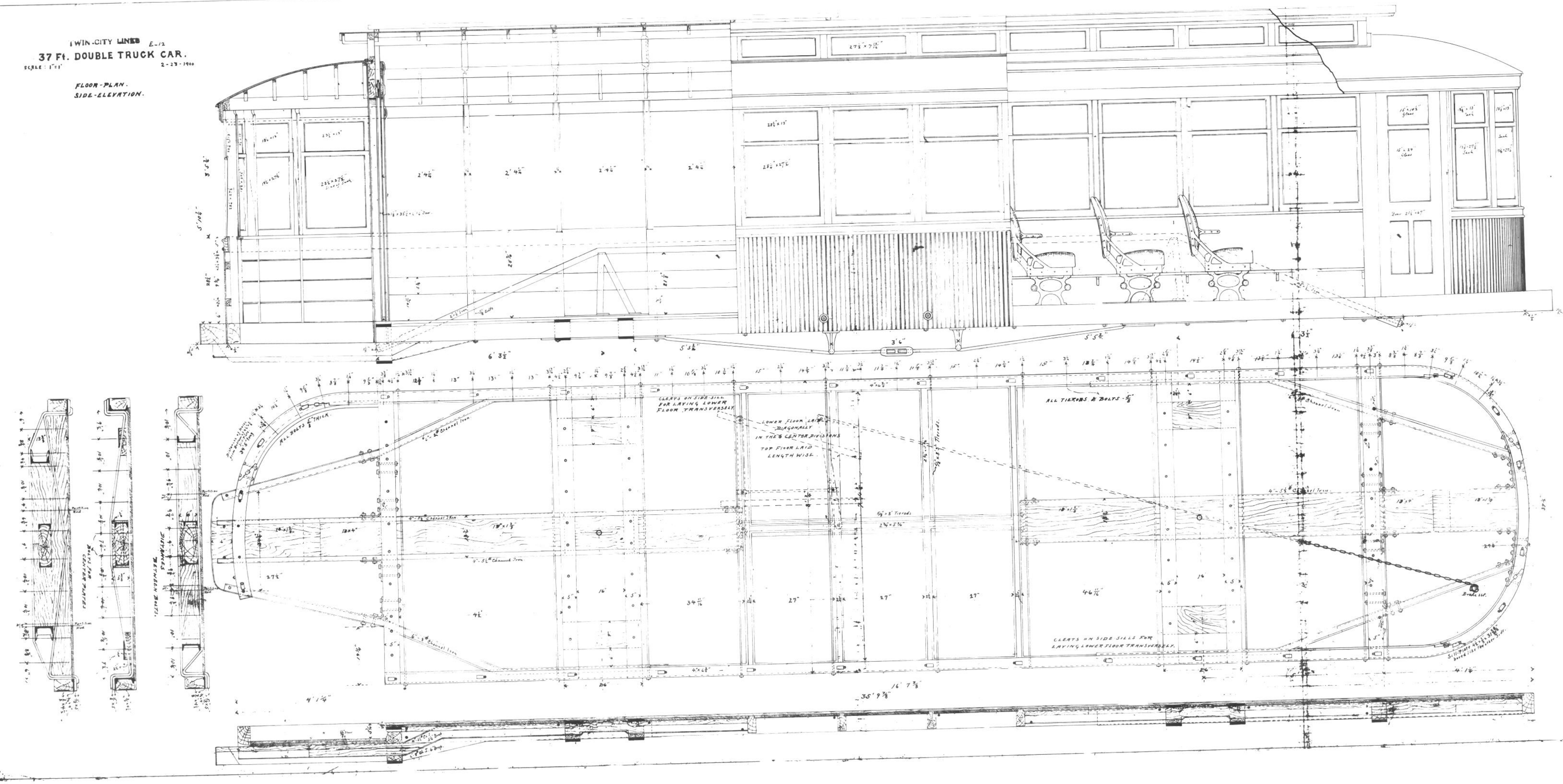
1-26-1903: A car is now being run on the Interurban line which is fitted with the Westinghouse magnetic brake and car heater. The apparatus is adapted to taking up and storing for use on the brakes and heating plant that part of the electrical energy which formerly went to waste between starting and stopping of the big motors. By utilizing this waste power the magnets are energized and they produce in the coils under the car seats sufficient heat to warm the big cars, at least in ordinary winter weather.

TWIN-CITY LINES E-12

37 Ft. DOUBLE TRUCK CAR.

SCALE : 1"=1'
2-23-1900

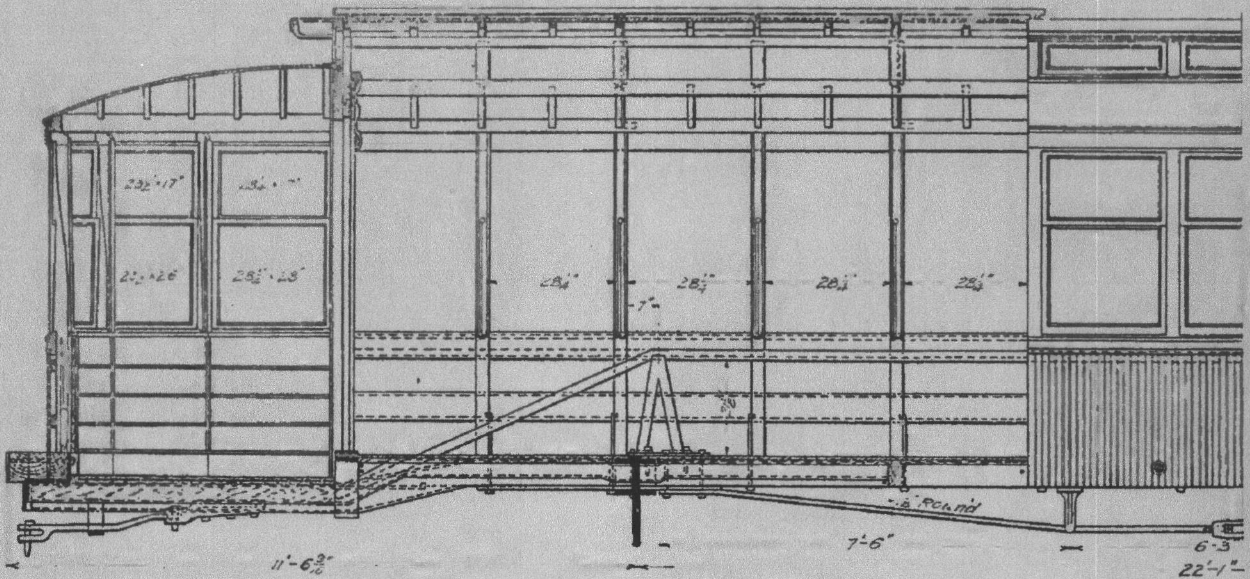
FLOOR-PLAN.
SIDE-ELEVATION.


CLEATS ON SIDE SILL FOR LAYING LOWER FLOOR TRANSVERSELY.
LOWER FLOOR LAID DIAGONALLY IN THE 6 CENTER DIVISIONS
TOP FLOOR LAID LENGTH WISE.
ALL TIERODS & BOLTS - 5/8"
CLEATS ON SIDE SILLS FOR LAYING LOWER FLOOR TRANSVERSELY.
ALL BOLTS 5/8" THICK
BOLTS FOR CENTER PLATES
DISTANCES BETWEEN BOLTS.
Partition Rod
Channel Iron
4"-5 1/4# Channel Iron
Brake sst.
Sill-Plate 4 1/2" x 3/4" x 31 3/8" bored like the other side.
35' 9 7/8"
16' 7 3/8"
4' 1 1/4"
5' 5 3/4"
3' 6"
6' 3 3/4"
37 1/2
2' 4 1/2"
27"
34 1/2"
46 11/16"

45-Ft. Car for Twin City Rapid Transit Co.

The car shops of the Twin City Rapid Transit Co., which are now under the direction of Mr. W. H. Evans, master mechanic, and the standards then used in car construction, were illustrated and described in the "Review" for February, 1899. Since 1898 all the company's new rolling stock has been built there, and orders have been filled for the other roads controlled by the same interests.

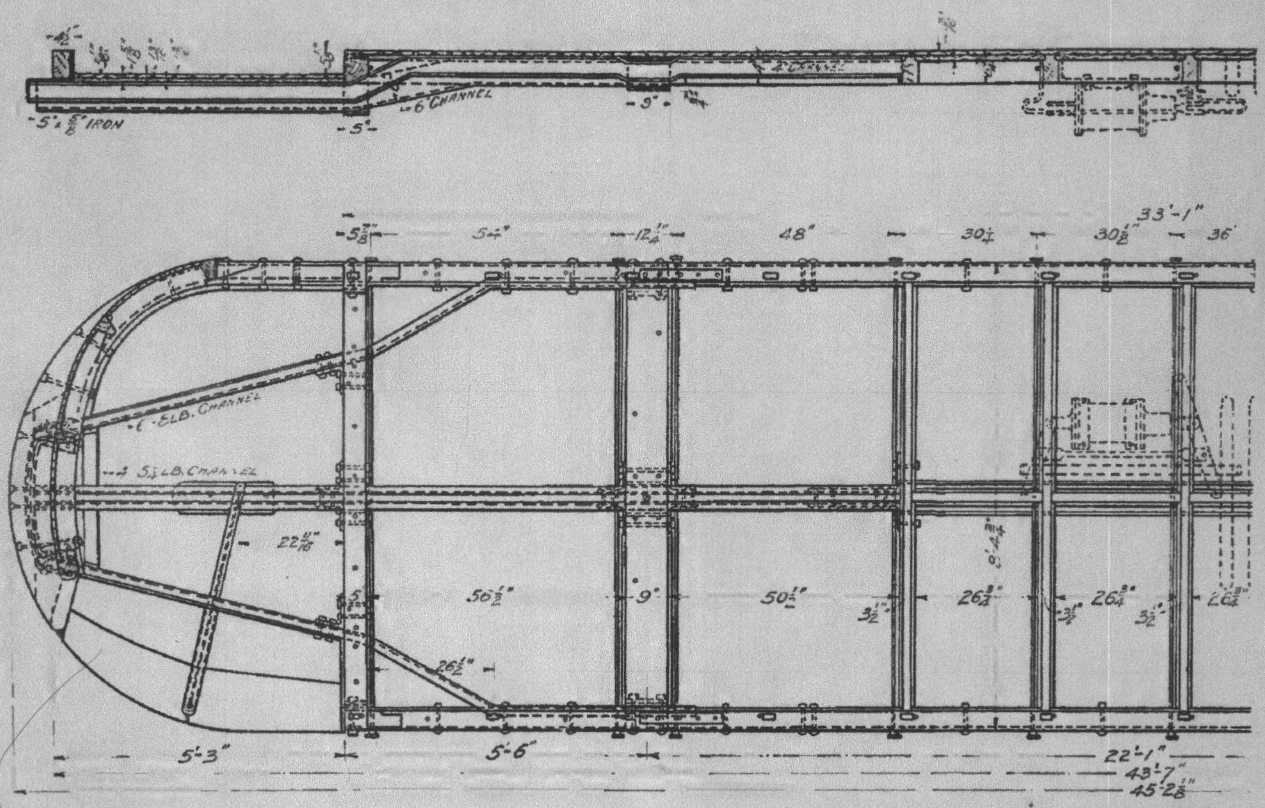
The company is convinced that double truck cars are more desirable for urban as well as interurban service and accordingly, as fast as practicable, large cars are being substituted for the older single truck equipment.



23½"×17"
23¼"×17"
23½"×26
28½"×28"
28¼"
28½"
28½"
28½"
7"
8" Round
11'-6⅝"
7'-6"
6'-3
22'-1"

F.G. 1 HALF SIDE ELEVATION OF CAR.

The present equipment includes 270 double truck closed cars, 42 of which were built this year, 35 double truck open cars, 365 single truck motor cars, and 50 closed trailers. The present requirements are for about 250 double truck and 250 single truck cars during



5"×⅝" IRON
5"
6" CHANNEL
9"
5⅝
5'4"
12¼"
48"
30¼
30⅛"
33'-1"
36
6" ELB. CHANNEL
4 5½ LB. CHANNEL
22 11/16"
5"
56½"
9"
50½"
3½"
26¾"
8'-4¾"
3½"
26¾"
3½"
26⅜"
26½"
5'-3"
5'-6"
22'-1"
43'-7"
45'-2⅜"

FIG. 2.—PLAN AND ELEVATION

the busy hours of the day. Some trail cars are operated during rush hours, but they are being discontinued as fast as possible.

The cars now being built, which are the standard for new work, are of the same general type as those illustrated in the "Review" in 1899, but are larger, being 45 ft. 2¼ in. over the bumpers. Other changes are that the rear platform has been dropped 5⅛ in. below the car floor to reduce the height of the steps, the steps are wider, with double gates (four gates), and the rear half of the body is fitted with longitudinal seats.

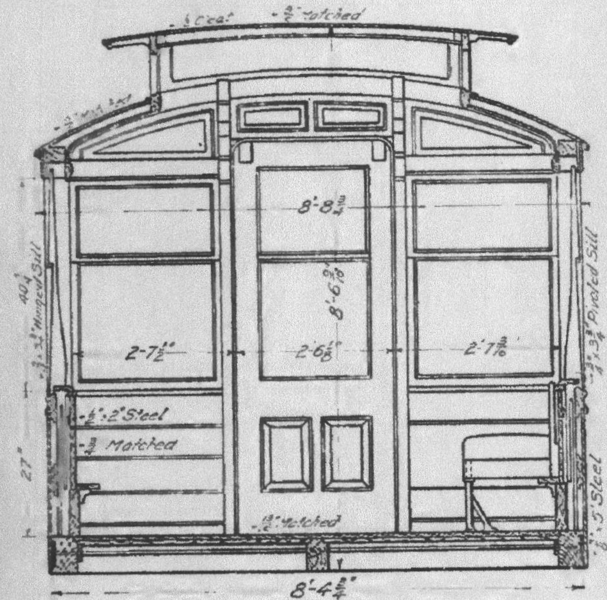

½" Cleat
⅝" Matched
8'-8¾"
8'-6⅜"
2'-7½"
2'-6⅛"
2'-7⅜"
40¼
Hinged Sill
Pivoted Sill
½"×2" Steel
⅜ Matched
27"
1⅛" Matched
5" Steel
8'-4¾"

FIG 3.—END ELEVATION OF CAR BODY.

The four gates are designed to provide two passages so that the entrance and exit of passengers may be simultaneous. The experience of the Twin City company in equipping its cars with gates operated under control of the motorman—who does not open them till the car has stopped, and who does not start the car till the gates have closed—has continued to be most satisfactory.

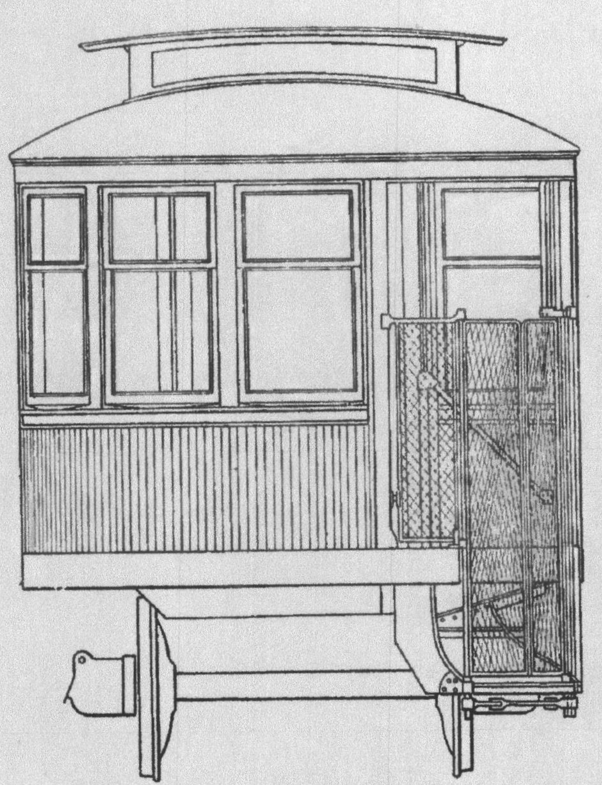
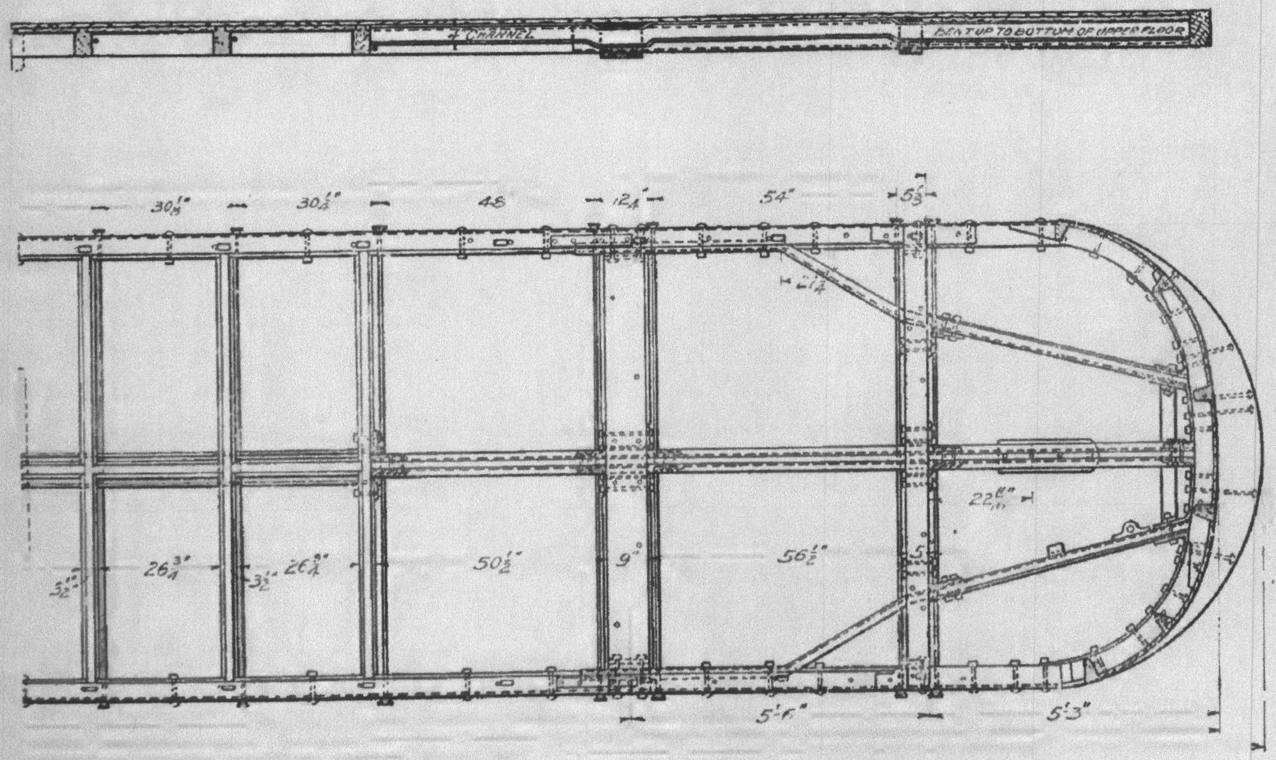


FIG. 4.—END ELEVATION OF CAR WITH GATE.

The double gates and the diagram of levers for operating them are shown in connection with drawings of the car.


4" CHANNEL
BENT UP TO BOTTOM OF UPPER FLOOR
30⅛"
30⅛"
48
12¼"
54"
5⅛
21¼
22
26¾"
3½"
26¾"
3½"
50½"
9"
56½"
5'-6"
5'-3"

OF FLOOR FRAMING.

The main transoms are placed symmetrically with respect to the extreme dimensions of the car and are 22 ft. 1 in. between centers. Between these are cross sills 3½ x 6 in. The side sills are carried on the main transoms, and at the ends of the body are transoms similar in general design to the main transoms, but inverted and hung from the sills. The three types of transoms are shown in elevation.

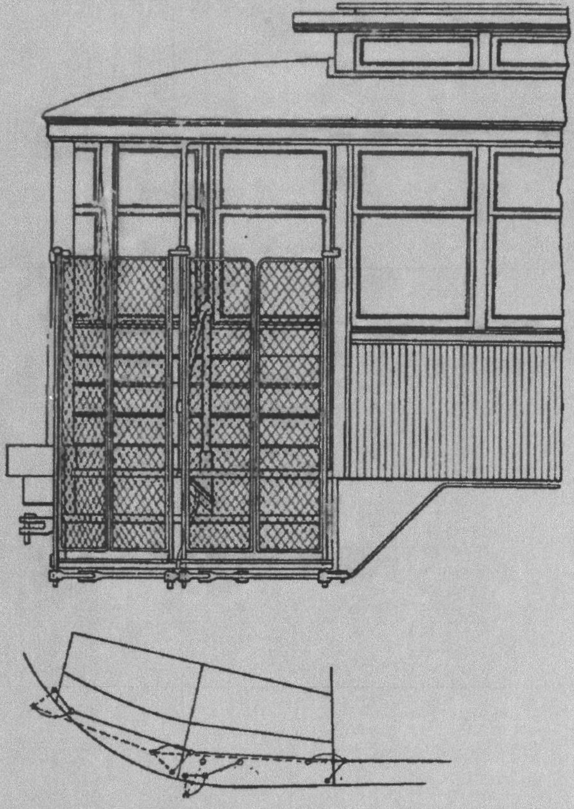


FIG. 5.—ELEVATION OF GATE AND DIAGRAM OF GATE LEVERS.

The platform sills are four in number, two 4-in. channels about 17 ft. long extending from the first cross sills through the main and end bolsters and bent up to bring the tops to the elevation of the floor, and two 6-in. channels about 11 ft. long, extending through the two transoms. The 6-in. channels are bent in two planes as indicated in the drawings of the car.

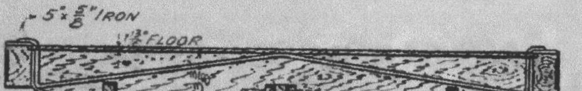


FIG. 6.—REAR END TRANSOM.

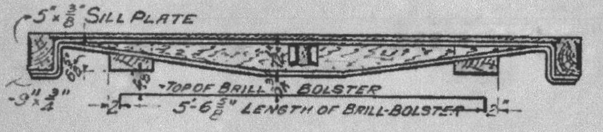


FIG. 7.—TRUCK TRANSOM.

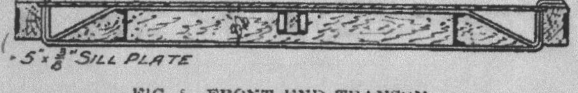


FIG. 8.—FRONT END TRANSOM.

In connection with a description of this car, something concerning the methods used in the forge shop to shape the bolster members and platform sills will be of interest.

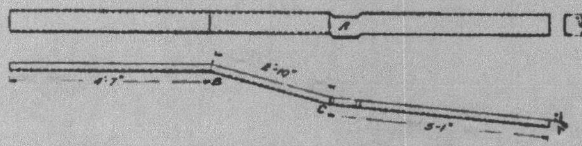


FIG. 9.—OUTER FRONT PLATFORM SILL.

The bolster members, of ¾ x 9-in. and ⅝ x 5-in. iron, are forged by hand, the bends being made over suitable forms. The bends in the platform sills are of three kinds, a double offset as at A in Fig. 9, bends in a horizontal plane as at B, C, F and G, and bends in a vertical plane as at D and E, Fig. 10.

These bends are made with a rail bender, suitable dies being provided and forms to fit into the channels. For offsetting, the forms and dies are placed as shown in the sketch, Fig. 11, the blocks c and b being about 10 in. long and the blocks a and d of dimensions corresponding to the width of the transom member to be cleared.

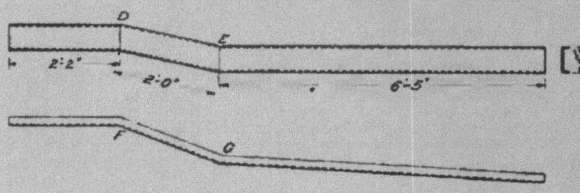


FIG. 10.—OUTER REAR PLATFORM SILL.

For bends like B and C only the filling pieces for the channel are needed, but for bends like D and E there is required a third narrow piece, beveled at top and bottom to match the channel when bent, which is placed between the filling pieces and serves to preserve the sharp corners in the outer flange. The most difficult of these bends are made with only two heats.

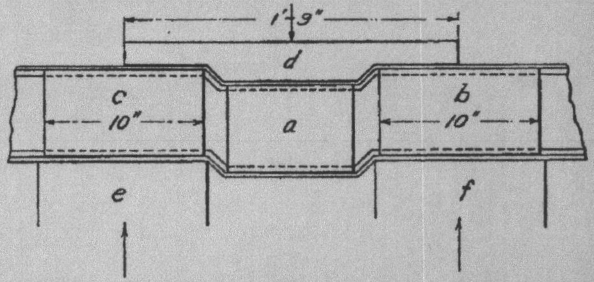


FIG. 11.—FORMS FOR OFFSETTING.

Another interesting device is a roll for bending cold 1¾ x 1¾ x 5-16 in. angles used for cable racks in tunnels which the company is building to connect the new power house with the sub-stations in Minneapolis. The angles are bent into U shape, the radius of the curve being about 18 in. The form is a 1½-in. bar bent to the proper shape and bolted to a plate trimmed to a concentric curve of 1¾-in. greater diameter. At the center of the plate is pivoted a

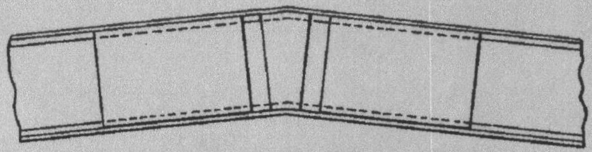
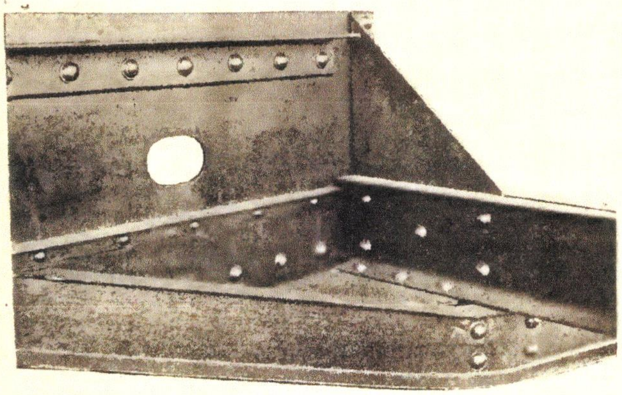


FIG. 12.—FORMS FOR VERTICAL BENDS.

lever 7 ft. long, and this carries a pin 2 ft. from the fulcrum with two rollers mounted on it. One roller has a face of 1¾ in. to engage the vertical flange of the angle to be bent, and the other is of smaller diameter to correspond with the outwardly projecting horizontal flange of the angle, the roller having a projecting lip which extends under the form plate and serves as a guide for the roller. Following the bending lever at an angle of about 30 degrees and connected to it is a second lever carrying a single roller shaped so as to engage both the flanges to the angle, which serves to prevent the angle from bulging during the bending process. Four men operate the bender, this number being required because of the small ratio between the power and resistance arms of the lever.

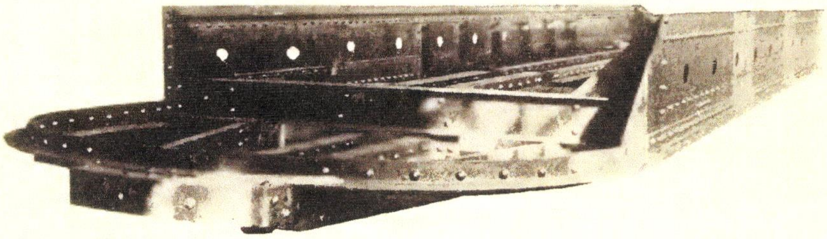
A NEW STEEL CAR FLOOR FRAMING



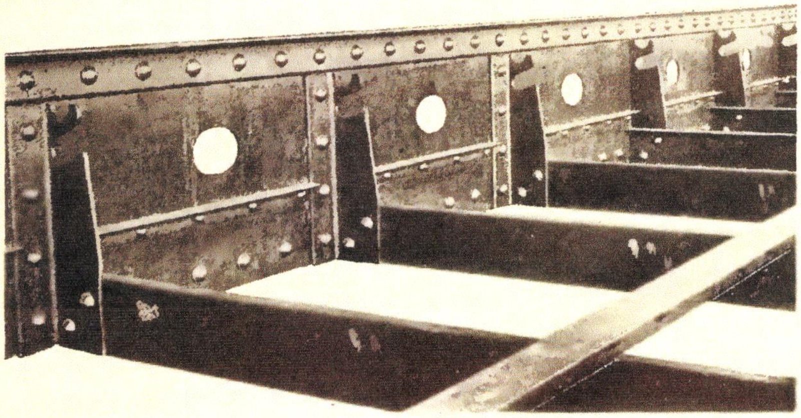
CONSTRUCTION AT THE CORNERS

The Twin City Rapid Transit Company, of Minneapolis and St. Paul, will make several extensions to its lines during the coming season. One of these definitely decided upon will connect Excelsior and Lake Minnetonka with Minneapolis. The extension will be about 20 miles long. Half of this will be covered by double track, which will be laid on the right of way of the old steam road known as the Minneapolis, Lindale & Minnetonka Railway. Special cars, which will be equipped with four GE 73 motors, are being built for the new line.

The accompanying engravings show the steel bottom framing to be used in their construction. These frames, which were constructed by the American Bridge Company, present many novel features. The side truss or web forms the interior finish of the car, the windows sliding down between the web and the outer sheathing, which will be secured to wood fillers. This arrangement permits the arm rest of the windows to be placed 6 ins. or 7 ins. lower than usual, as the window, when down, drops as low as the bottom of the side sill of a car of the usual construction. The angle iron, riveted on the inner side of the web, serves as a foot rest. Side brackets of steel, which are plainly shown in the illustrations, support the heater pipes. The rigid construction at the corners is well illustrated in the reproductions. Hand holes in the vertical web permit cleaning of the window pockets. Cast-steel bolsters will be used. The remaining portion of the car will be of the usual wood construction.



STEEL UNDER-FRAMING OF CAR FOR THE TWIN CITY RAPID TRANSIT COMPANY



BRACKETS FOR THE SUPPORT OF THE HEATER PIPES

LEAKAGE FROM WOODEN POLES CARRYING HIGH-TENSION WIRES

A recent issue of "Electrotechnische Zeitschrift" publishes the results of a series of tests conducted by the Kristiana Elektricitetsvaerk of Norway in 1903 to determine the leakage from high-tension circuits on wooden poles. A metal band was placed at heights of 1, 2 and 3 meters around a pole carrying a 7000-volt circuit. The differences in voltage between the band and the earth, and the current flow in milliamperes in the pole were determined. The tests indicated that it was highly improbable, though not impossible, for a pole under these conditions to carry a dangerous current. A remedy was suggested of wrapping lightly a metal band around the pole, about 6 ft. above the ground, and it was stated that the protection has been prescribed by law in Norway for about two years.

◆

THE LAKE SHORE & MICHIGAN SOUTHERN RAILWAY EXPERIMENTING WITH GASOLINE CARS

The Lake Shore & Michigan Southern Railway, at its Collinwood shops near Cleveland, is making some experiments with a gasoline car designed by the General Electric Company. While this particular car is not designed exactly for passenger service, it indicates that there is much truth in the report that this well-known steam road is investigating the gasoline type of car with a view to determining its possibilities for interurban service. The car now used was designed for service in the yards for transferring the train crews who handle the distribution of freight cars in the yards at Collinwood. It is fitted with a vertical four-cylinder gasoline engine, which is direct-connected to a G.E. generator supplying current to motors driving the car axles. The car seats about twenty-five men, and it is said to save four or five minutes on each shift, as compared with the locomotive and car heretofore used in this service.

The Jamestown, Chautauqua Lake & Lake Erie Railway, a small steam line which is closely affiliated with the Lake Shore & Michigan Southern, has for some months been making experiments with a gasoline car for interurban passenger service. It is understood that the company is so well pleased with the results that it will build four or six cars and use them with an hourly headway between Jamestown and Westfield, N. Y. The cars will be 46 ft. long and will seat 60 passengers. They will be fitted with eight-cylinder gasoline engines with no electrical equipment.

◆

It is estimated that on Sunday, June 18, the Brooklyn Rapid Transit Company carried a total of 1,780,000 passengers. Of these 1,480,000 were cash fares and 300,000 transfers.

AVERY® POLY-VU

Minneapolis Tribune (1867-1908); Sep 12, 1905;
ProQuest Historical Newspapers Minneapolis Tribune (1867-1922)
pg. 6

BARNS

Of Street Railway Company at Thirty-First Street Damaged By Fire.

Lightning Strikes Building and Soon Starts Many Blazes In Stock Room.

Three New Cars Are Damaged—Night Foreman Brinker Has Close Call.

A bolt of lightning striking the Thirty-first street car barns about midnight last night partially destroyed three of the fine new cars, one of which was one of the Minnetonka cars, and doing damage to the building and stock to the extent of about $10,000.

A clap of thunder which seemed to the workmen employed in the building to be the combined energy of all the electricity stored in the clouds came down upon the building during the later part of last night storm.

The bolt struck the switchboard in the central part of the shops. In an instant the wires burned in two by the current were grounded. Glares of light lighted the entire grounds and the intense heat generated started a dozen blazes. Before a hand could be raised to save any of the cars stored within the building the flames were racing through the structure.

The fire apparatus at the plant was immediately pressed into service, and although death lurked amid multitude of swaying wires, the men worked like demons to stay the fire. Two companies of the fire department responded to the call, and after half and hour's fight the fire was put out.

TOUCHES LIVE WIRE.

A shock from one of the loose wires that threw him almost unconscious to the ground was the means of saving the life of S. N. Brinker, the night foreman of the shops. The moment the crash of thunder occurred he hurried to the switchboard with the intention of shutting off the current.

As the wiring of this board was grounded after the bolt struck, this would have meant death to anyone touching a lever. As he ran through the smoke he came in contact with a live wire that hurled him to the ground. In his fall he broke away from the wire, and although severely shocked he was up and fighting the fire within a few moments.

The three cars which were in the midst of the fire were valued at from $4,000 to $6,000 apiece. One has the entire front charred so that its loss is about half. Another has the roof almost wholly destroyed. The car built for the Minnetonka line with its double power motors and more expensive build presents a sorry appearance after its baptism of fire. The heat made the brilliant finish of both the exterior and interior one blackened surface. The windows are all shattered and in places the woodwork is burned away.

The supply room is a wreck but as the stock in this part of the building was mostly ironwork, the loss will not be so great.

ROUNDHOUSE IS SCORCHED.

The fire swept through the roundhouse and nothing could be done to run out any of the cars. But a few seconds elapsed before the rear portion of the shops and the roof of the roundhouse were in flames.

A number of the employes of the street car company received shocks from coming in contact with wires, but no serious accidents resulted. The firemen, with their rubber boots, were more secure but the danger was great that they might strike one of the wires in the dark.

After the fire, watchmen were stationed about the building to prevent anyone, whether employes or not, from going through the part of the building near the switchboard.

With the exception of a few minutes' delay of the cars going toward town, there was no break in the service because of the fire.

CARS BUILT IN THE SNELLING SHOPS, ST.PAUL

25 cars	**1266-1290**	September-November 1907. Class H-6.
19 cars	**1291-1309**	March-May 1908. Class I-1. These were faster cars ordered for a planned cut in running time on the "Interurban" line. This was the first group of cars to have 34" diameter steel wheels; all previous cars had 34" diameter cast iron wheels.
1 car	**5**	May 1908. Wire Car. A work order dated May 1908 covered building one Wire Car.
4 cars	**29-32**	December 1908. Snow Plow-Sweeper.
50 cars	**1310-1359**	November 1908-March 1909. Class J-2.
1 car	**33**	April 1909. Underground Wire Crew Work Car.
20 cars	**1360-1379**	July-September 1909. Class K-2.
1 car	**35**	November 1909. Rail Grinder.
3 cars	**36-38**	March 1910. Snow Plow. Number 38 was equipped with a double-shear plow for use on the Stillwater Division. It replaced 25 ~~was was~~ re-assigned in October 1910 to East Side Station for use on the "St. Louis Park" line.
25 cars	**1380-1404**	January-March 1910. Class K-8.
20 cars	**1405-1424**	April-July 1910. Class K-8.
25 cars	**1425-1449**	November-December 1910. Class K-8.
1 car	**1450**	January 1911. Class K-8. This car was built with an experimental sliding front exit door and folding steps. The experiment was unsuccessful as the step mechanism tended to freeze up in cold weather.
35 cars	**1451-1485**	January-February 1911. Class K-8. Cars 1482-1485 were sold July 1, 1911, to Duluth St. Ry. as their 238-241.
3 cars	**43-45**	November 1911. Sand Car.
100 cars	**2nd1482-1485; 1486-1581**	February-October 1912. Class L-8. Cars 1564-1566 were sold in November 1912 to Duluth St. Ry. as their 252-254.
3 cars	**46-48**	May 1912. Work Car.
1 car	**49**	February 1913. Refuse Car.
1 car	**50**	April 1913. Crane Car.
17 cars	**2nd1564-1566; 1582-1595**	April-May 1913. Class L-8. This order was originally made for cars 1582-1598 but was then re-numbered to provide replacements for the three cars previously sold to Duluth St. Ry.

40 cars **1596-1635** May-October 1913. Class L-8.

50 cars **1636-1685** December 1913-February 1914. Class L-8.

6 cars **51-56** March 1914. Work Car.
All steel construction except the cab.

1 car **58** April 1914. Cupola Car.
Specially designed and equipped for thermite rail-joint welding. Output was three tons per hour.

1 car No Number November 1914. Switch Car for the "Inter-Campus" line.
This car was owned by the University of Minnesota and used for hauling railroad cars of coal, fertilizer, livestock and machinery from the Minnesota Transfer Railway interchange to the Agricultural Campus. It was also occasionally used to haul less-than-carload shipments of freight and supplies from the Main Campus Storehouse to the Agricultural Campus.

90 cars **1686-1775** October 1914-February 1915. Class L-8.

1 car **59** January 1915. Sprinkler Car.

1 car **61** April 1915. Cupola Car.
This car was built identical to car 58 so as to have one rail-welding car for the Minneapolis Division and one rail-welding car for the St.Paul Division.

8 cars **62-69** May-July 1915. Work Car.
All steel construction except for the cab. They were later used mostly as ash cars at the various Car Stations and the Snelling Shops.

1 car **70** July 1915. Sand Blasting Car.
Compressed air for sand blasting was supplied by one Christensen D-4 compressor.

1 car **71** Pavement Plow.
This was a four-wheel Gondola trailer, ballasted with scrap metal and old paving blocks, fitted with a steel ripping plow at the rear. It was pulled by a Work Car to rip up the granite paving blocks between the rails on track reconstruction projects.

17 cars **1776-1792** November-December 1915. Class L-8.

2 cars Mpls. Anoka & Cuyuna Range Ry. **1-2** December 1915. Class L-8.
TCRT shop orders listed these cars as 1786A and 1786B respectively. Car 1 was modified in that the front platform was specially designed for a baggage compartment: the front bulkhead was constructed two window posts to the rear of its normal location and a large combination baggage doors-motorman's cab door installed.

2 cars **2000-2000A** April 1916. Class M-9.
Master Mechanic Walter J. Smith had decided that it would be advantageous to build a car much lighter than the standard type. If successful such a car would make less noise, reduce track maintenance, accelerate and brake more rapidly, and reduce power consumption. TCRT's designers found that the biggest saving in weight could be made in the trucks; consequently a correspondingly lighter motor could be used. The end result was this two-car train, the lead car controlling all motors and brakes on both cars. The radically designed trucks had inside frames and journals with air-operated band brakes. The coupler was a hollow tube in which all control cables were carried.

72 cars **2nd 1713,1716,1719,1722,1724,1789-1792;**
1793-1851 November 1916-February 1917. Class L-8.
1852-1855 June 1917. Class L-8.

Original cars 1789-1792 were sold in May 1916 to Duluth St. Ry. as their 263-266 respectively. Then cars 1724,1719,1716,1722 were sold in July 1916 to Duluth St. Ry. as their 267-270 respectively. Car 1713 was sold in July 1916 to the Minneapolis, Anoka & Cuyuna Range Ry. as their number 7; at MA&CR's request TCRT was to move the front bulkhead one window post to the rear to provide space for baggage on the front platform. To replace these nine cars and to give the system a total of exactly 1,100 cars, this order was for a total of 72 cars. Slow delivery of motors delayed completion of the last four cars until June. On October 29, 1917, TCRT made an agreement with the Minneapolis, Anoka & Cuyuna Range Ry. whereby the latter acquired Passenger Car 1855 and Snow Plow 25; 1855 was delivered to them in November and became M.A. & C.R. Ry. 8.

1 car **72** May 1917. Wire Car.

This car was assigned to the Owen St. Station for service on the Stillwater Division.

1 car No Number October 1917. Work Car-Snow Plow-Locomotive

Built for the St.Paul Southern Electric Ry. from the same plans and specifications as the Switch Car for the University of Minnesota for economic reasons but with a few modifications requested by the St.Paul Southern which also furnished the trucks and motors.

8 cars **75-82** December 1917-March 1918. Snow Plow.

2 cars **2002-2003** November 1921. Class P-14.

This was also a lightweight two-car train, an improved version of 2000-2000A (later 2000-2001) with a new body style and improved truck design. The lead car controlled the motors and brakes on both cars. The steel tube coupler contained motor wires, bell wires and air hose.

4 cars **1-4** April 1925. Class P-10.

These cars were built for the Stillwater local lines and were the only cars ever built by TCRT originally for one-man only operation.

2 cars **2004-2005** July 1926. Class O-11.

These were lightweight multiple-unit cars, designed to operate singly or as a two-car train.

25 cars **2006-2030** December 1927-January 1928. Class P-11.

These were the last new cars to be constructed by TCRT.

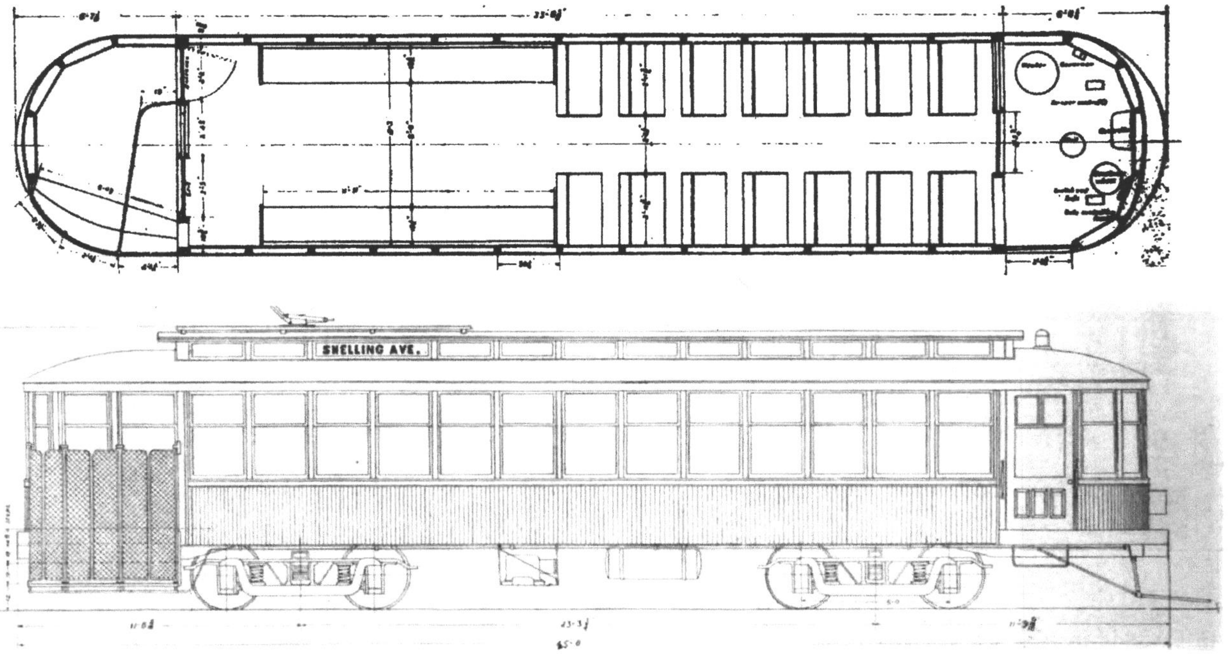
New Car for Twin City Lines and a Study of the Minneapolis Gate

Editorial Correspondence

The Twin City Rapid Transit Company, of Minneapolis and St. Paul, is building at its own shops the first of 75 new cars, which embody a number of novel ideas. Among the conspicuous features in the design is the arrangement of the rear platform in conjunction with a new form of the so-called "Minneapolis gate."

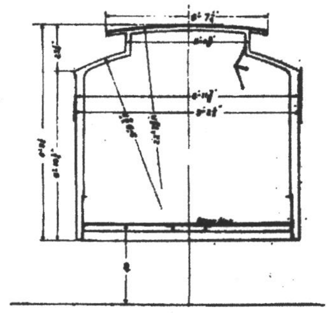
The cars have steel bottom framing formed of angles and steel plates, hot riveted. The character of the frames will be understood from one of the accompanying engravings. The steel side plates or webs serve as the inside finish of the car, and the space between the plates and the outside sheathing forms a window pocket into which the sash can be dropped, thus permitting of a low window rail and providing all the effects of an open car when the windows are lowered. The design gives a thoroughly rigid and long-life construction. The steel under-frames are turned out complete at the company's shops, the buildings at the new Snelling avenue repair plant having been fitted with pneumatic tools and heavy cutting, shearing and forging appliances to accommodate this work.

The new type of car is designed for single end operation, all of the auxiliary appliances, as sand box, hot water heaters, etc., being accommodated in the front vestibule, leaving the rear platform and interior of the car free for the unobstructed use of passengers.



Plan and Elevation New Car for Twin City Lines, Showing Latest Form of the Minneapolis Gate

The cars measure 46 ft. 8 ins., over all, and are unusually wide, the over all width being 9 ft. 2½ ins. This permits of a wide aisle and a very roomy rear platform. The arrangement of the seats is shown on one of the drawings. It will be observed the forward portion of the car has cross seats, and the rear half longitudinal seats. This layout has been found exceedingly satisfactory as it gives the long distance passengers the comfort of a cross seat, but leaves a very wide aisle at the rear, and does away with much of the annoying crowding and pushing when passengers are standing. The car seats 48 people.



End Section, New Twin City Car

The Rear Platform

The arrangement of the rear platform is distinctly novel. This platform measures 5 ft. 9 ins. long, by 8 ft. 6 ins. wide, in the clear. Instead of one wide door at the rear of the car there are two smaller doors, one on each side of the middle, one for entrance and one for exit. An iron railing divides the platform and rear step

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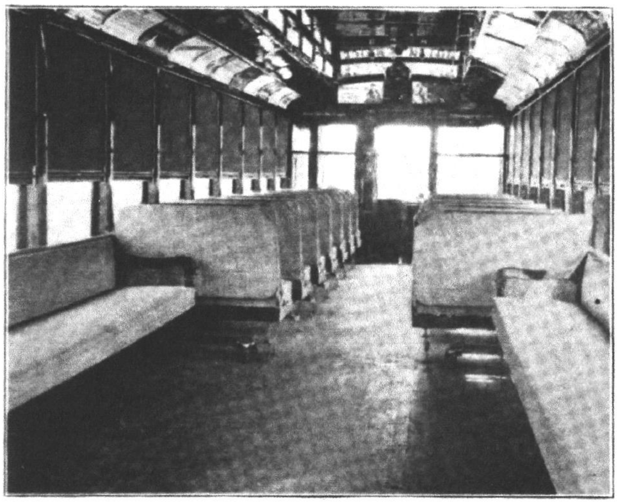
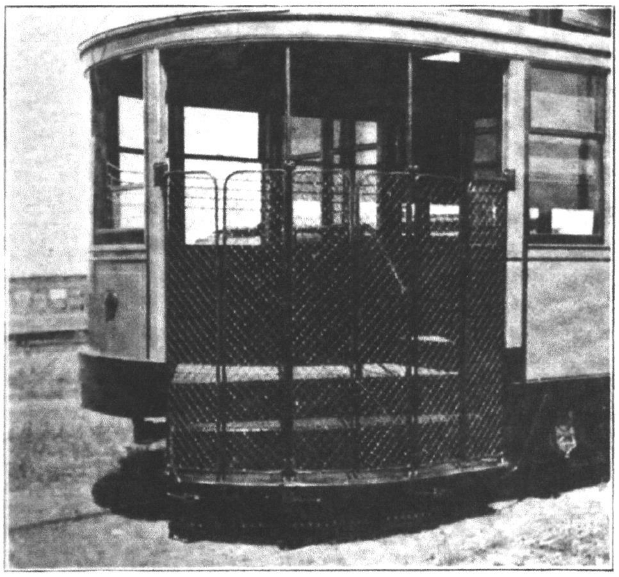
into entrance and exit passageways. The conductor stands on the platform in the angle of the railing between the two doors. The entrance door, which is at the left as the passenger enters, is designed to be kept closed normally, and is opened or closed at will by the conductor, by means of a lever operated from his position on the platform. The object of putting this door under the control of the conductor is to avoid the annoyance of the door slamming in the face of passengers, and also to enable the conductor better to regulate the entrance and exit of passengers.



The Seating Arrangement Gives Roomy Aisle at the Rear Door

The Minneapolis Gate

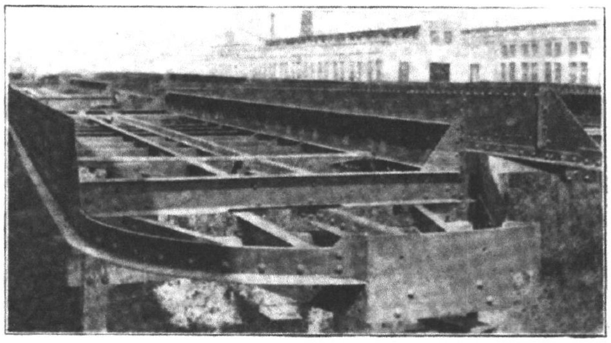
In conjunction with the divided platform a new design of the Minneapolis gate is used.



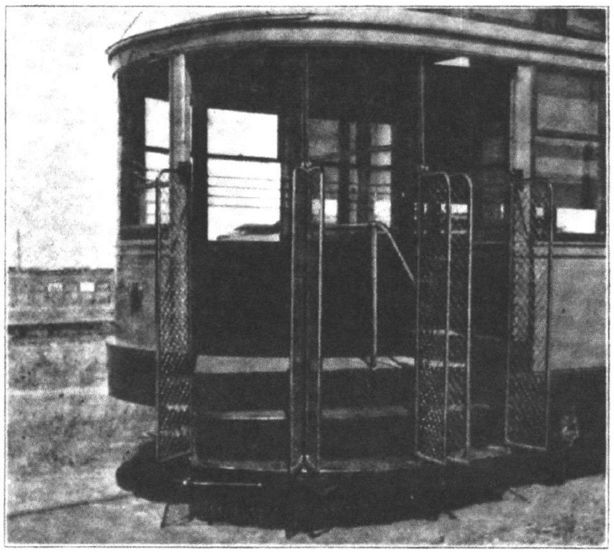
No One May Enter Until the Gates Are Opened

In this connection, it is in order to direct special attention to this safety device, which has been developed by the Twin City company, and is used on all the cars of the Twin City lines. The so-called Minneapolis gate was first devised nearly 14 years ago primarily to stop rear end boarding and alighting accidents. As at first designed, it consisted of a single swinging gate about 3½ ft. wide, outside the line of the rear step, and operated by the motorman from the front vestibule by a handle and a system of levers running under the car. With this gate no passenger can leave or board the car until it has come to a full stop, and the motorman has opened the gate.

The essential features of the gate have not been changed, but the later development has been in the direction of increasing the width of the step and the width of the rear outside vestibule door, necessitating a wider gate opening. This was met by putting on, first a pair of narrow gates, and in later cars having still wider platform steps, two pairs of gates were provided, both operated simultaneously by the motorman's lever. In the latest type of car here described, the vestibule door opening is 6 ft. 1 in., and there are three pairs of gates, or six gates in all, as shown in the illustrations. All the gates are opened or closed by a single movement of the handle in the motorman's vestibule. The system of levers for accomplishing this is made clear in the drawings.



The Steel Underframes



Two Pairs of Gates Are for Entrance and One for Exit

The railing previously mentioned as dividing the rear

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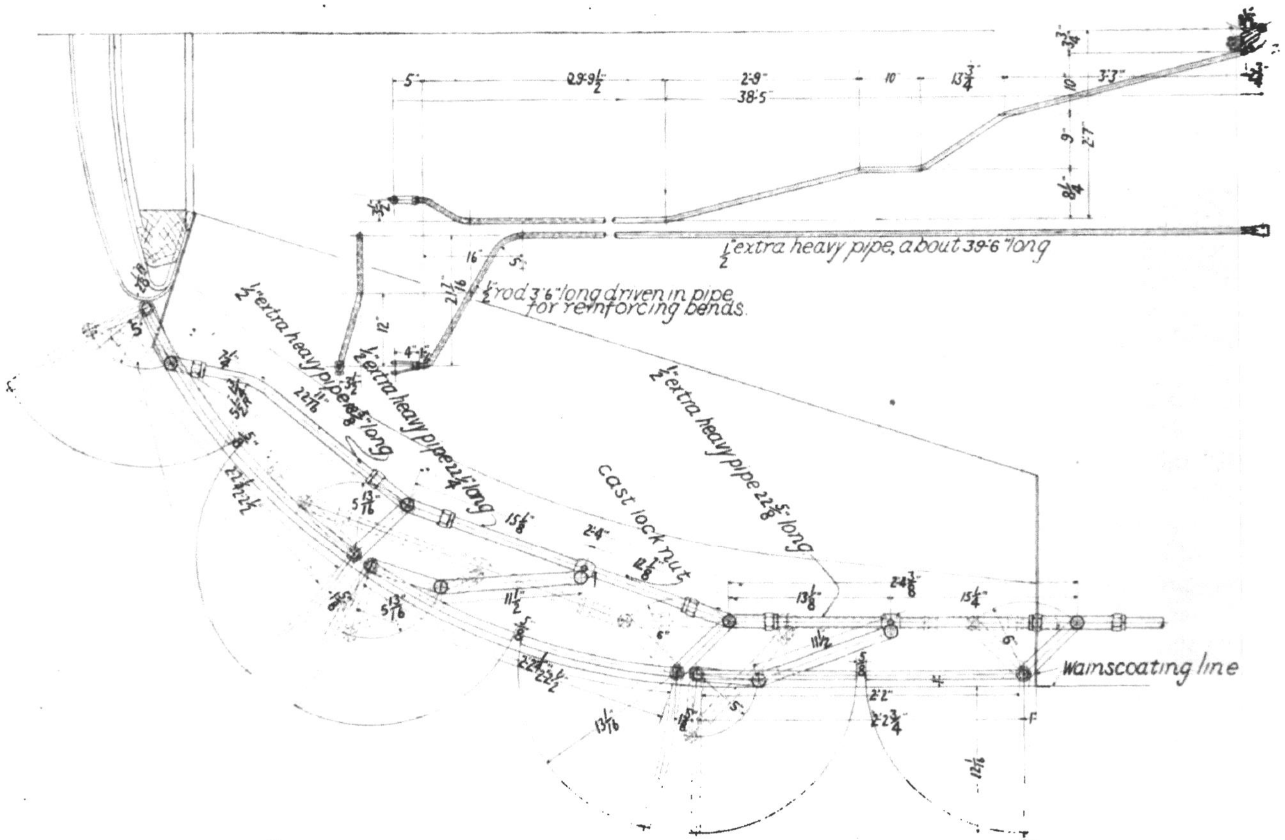
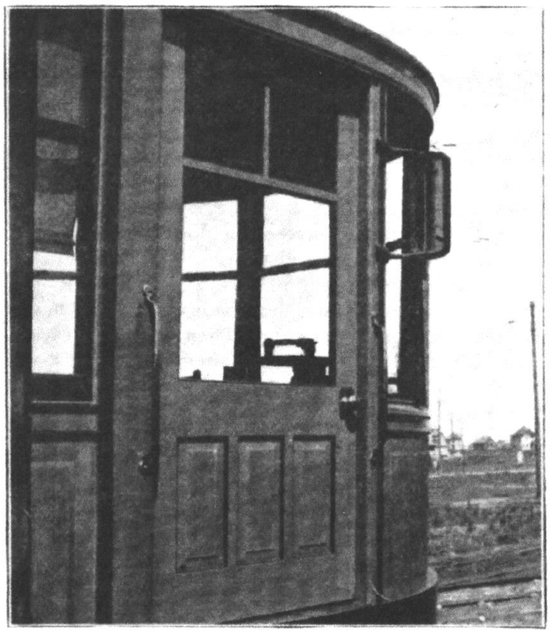
platform, also divides the gate openings, giving one pair of gates nearest the car body for exit, and two pairs for entrance to the platform back of the railing. There are no steps whatever for passengers at the front end of the car, and all must enter and leave by the rear platform.


½" extra heavy pipe, about 39'6" long
½" rod 3'6" long driven in pipe for reinforcing bends
½" extra heavy pipe
½" extra heavy pipe
½" extra heavy pipe 22⅝" long
cast lock nut
wainscoating line
2'9"
38'5"

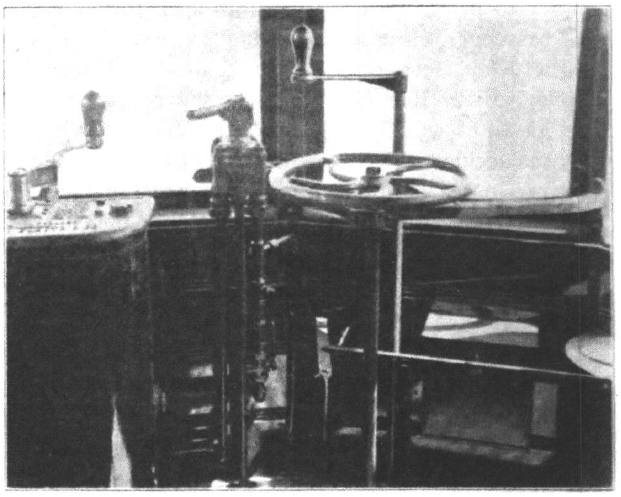
System of Levers for Operating the Rear Gates from the Motorman's Vestibule



A Small Mirror Enables the Motorman to Watch the Rear Step

A necessary part of the equipment in conjunction with the rear gates is a small mirror, mounted outside the motorman's vestibule, by means of which the motorman can watch the rear step, and make sure all passengers have boarded and left the car before he closes the gates.

The car is provided with push buttons at each seat and on the rear platform. These signal the motorman direct. However, the motorman starts the car only on bell cord signal from the conductor.



The Handle at the Right Over the Hand Brake Wheel Operates the Gate

Comments

Although the new Minneapolis car is not designed primarily with the idea of collecting the fares on the

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rear platform, and in fact no announcement has been made that the Twin City Lines expect to inaugurate this system, it would appear that the Minneapolis form of rear end gate is worthy of the most careful consideration on the part of electric railway managers, possibly in conjunction with the pay-as-you-enter idea, but primarily as a means of preventing rear platform accidents. The scheme has now been in practical operation on the Twin City lines, under the most trying conditions, for a sufficient length of time to demonstrate its feasibility, and the testimony is all in its favor.

In a recent interview by the editor of Electric Traction Weekly, Mr. Hield was asked to state just what the experience with the gate had been. He was frank in saying that on one or two occasions hostile newspapers had made the gates an excuse for printing unfavorable comment, but more in the spirit of criticizing anything a street railway company may do, than because of any tangible objection to the gate itself. At the present time the press and the public generally are thoroughly in accord with the gate idea, because it is recognized as a safety precaution of the highest degree.

As far as rear platform accidents are concerned, Mr. Hield states that what might be termed legitimate boarding and alighting accidents have been virtually eliminated. There have been a few instances in which passengers have claimed to have suffered slight injury due to their clothing or fingers becoming caught in the gates, but on investigation most of these have been found to be fraudulent claims.

From the traffic standpoint, there has been no difficulty whatever. On first thought it would appear that the gate would increase the time lost at stops, but in practice this has not been found to be the case. Of course, compared with the practice of permitting passengers to board the car while it is in motion, it does take somewhat longer to bring the car to a stop, open the gate, admit the passenger, close the gate and proceed, but this very slight delay is charged up to accident insurance. Mr. Hield believes that if any time could be saved without the gates, it would not compensate for the greatly increased accident account. As a matter of fact the additional time lost in stops is offset by more rapid acceleration by motorman due to the fact that he knows the rear step is O. K. Also, the motorman can run faster up to point of stop when he knows passengers cannot jump off. With the new arrangement of exit and entrance, enabling passengers to board and leave simultaneously at busy points, this lost time factor will be entirely eliminated.

◆

Have you reserved exhibit space for the Atlantic City convention? The Exhibit Committee is at Room 1822, 299 Broadway, New York City.

The 1908 electric railway conventions will be record-breakers. The place—Atlantic City, N. J. The time—the week beginning October 12. One of the events—the ELECTRIC TRACTION WEEKLY Convention Issue, out October 3.

HANDLING THE ADVERTISING PRIVILEGE IN THE CARS

The Twin City Rapid Transit Company handles the card advertising privileges in the cars itself, this department being under Mr. A. W. Warnock, general passenger agent and Mr. A. N. Walters, advertising agent.

The rates charged for the display of one standard advertising card in the side racks average 2 cents per car per day. For all the cars of the system (about 500 in regular service on the streets) the rates on a yearly contract basis are 40 cents per car per month, equal to $200 per month or $2,400 a year to cover all the cars. The rates for shorter than yearly contracts, and also for covering only a portion of the cars, are slightly higher per car per month in proportion. The rate for cards on each side of the register at the end of the car is on the basis of 60 cents per car per month on a yearly contract of $3,600 for all the cars for a year.

The size of the standard advertising cards is 11x21 ins., 6 ply thickness, giving a type display of about 10x20 ins. Advertisers furnish their cards at their own expense.

The "circulation" given amounted for the first 11 months of 1907 to 140,215,412 passengers. The average number of passengers carried per car per day is over 700.

In a little booklet prepared for soliciting car advertising, issued from Mr. Warnock's office, the following appears:

Street Car Advertising

Street car advertising knows no classes. Everybody rides, and he who rides must read.

Street car cards are repeatedly and continuously securing attention and getting results.

Dozens of eyes read each street car card at the same time, thus stimulating conversation about the article advertised.

In other mediums the reader hunts for the advertisement. In the street car the advertisement hunts the reader, pursues, catches and holds him.

Even if you should succeed in dodging a street car card today, it will catch you unaware tomorrow. It is always on the lookout and never tires.

There is one time when nearly all city people have leisure while they ride on street cars. Then they are ready to read the car cards and they do read them.

Ninety per cent of the people who travel on "Twin City" street cars are individual money earners and individual money spenders—and because they are such, they read the cards.

Who rides? Essentially the commercial class. Those who have means to gratify their wants, active citizens, women with individual purses, housekeepers, who look to the cards for suggestions and hints.

It is one of the strongest points in favor of street car advertising that it is absolutely clean. There is never any question about it. It is all too prominent and boldly displayed for any objectionable publicity to be entertained. The striking border of announcements that gives life to the car consists of a series of clean, honest propositions. An advertiser is in good company, and must look to it that he is up to the standard.

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Improved Cars for Twin City System
Minneapolis Tribune (1867-1908); Aug 28, 1908;
ProQuest Historical Newspapers Minneapolis Tribune (1867-192
pg. 8

Improved Cars for Twin City System

Rapid Transit Company Has Up-to-Date Coaches Under Construction.

Separate Gates for Entrance and Exit, Controlled by Conductor.

Upwards of a dozen new cars are now under construction at the shops of the Twin City Rapid Transit company at Midway which, when placed on the tracks in the Minneapolis and St. Paul system, will make a noticeable change in the service.

The new cars are the same in general appearance and contour as those now in use, but instead of two gates or four, as the cars are now made, there will be six gates operating in pairs on the rear vestibule. Two of those pairs of gates will be used for entrance to the cars while the other pair of gates will be used for exit only. In the back of the car there will be two doors, one on each side of the middle, for separate uses; one small door on the side opposite the gates, for instance, and a larger door marked exit on the opposite side. These two doors are separated by a railing in the vestibule which also divides the gates, leaving two seats at the rear and one set near the exit door.

This arrangement will make it necessary for the passengers entering the car to pass one at a time through the smaller door, which will be opened and closed by a lever in the hands of the conductor. Passengers leaving the car will pass out on the other side of the conductor who stands between the doors inside the railing.

This design for the rear of the car is almost identical with that of the New York trolley line's pay-as-you-enter cars, and it is more than likely that Minneapolis and St. Paul will be at the head of the list as usual in this respect as well as in every other improvement connected with street railway systems.

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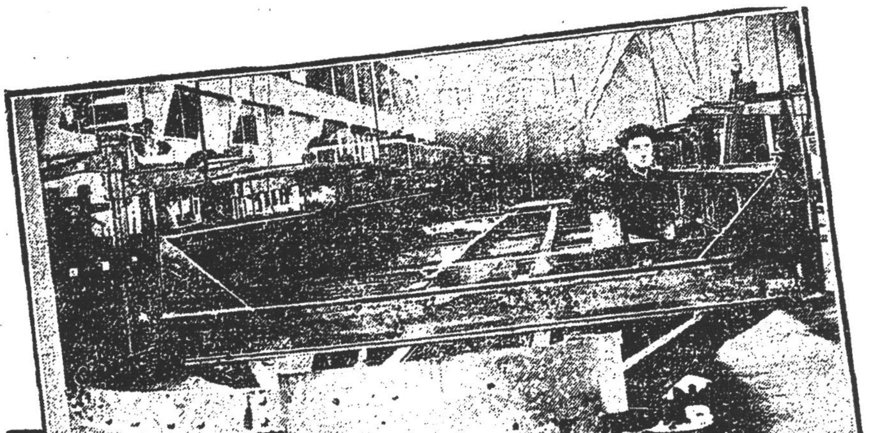
Traction Company Is Building 100 New Cars in Snelling Shops; Efforts Are Bein...
Minneapolis Morning Tribune (1909-1922); Feb 4, 1912;
ProQuest Historical Newspapers Minneapolis Tribune (1867-1922)
pg. 7

Traction Company Is Building 100 New Cars in Snelling Shops; Efforts Are Being Made to Improve Facilities for Ventilating



GETTING THE IRON FRAME READY FOR THE WOODWORK.

PUTTING UP THE WOOD FRAMEWORK OF A CAR

ONE HUNDRED new street cars with improved ventilating systems are being built in the Twin City Rapid Transit company's shops at Snelling and University avenues. The first car to be finished and placed in service will be car No. 1,482. It will leave the shops Tuesday and will go into service on the Lake street line. The other cars will be finished and sent out at the rate of one a day after Tuesday.

The master mechanic at the shops says it has taken nine weeks to assemble the materials for the new cars, and three weeks more to manufacture them. Except that the cars are very new and glisten with bright metal ware and varnish, they look just like the other cars on the Twin City lines. There are some changes in the new cars, but they are few.

Many Work on Cars.

Each car will weigh 45,000 pounds. Each will have passed through the hands of more than 500 workmen. The truck castings are made and the steel frames cast and welded and bolted together, and this frame is sent into the car shop on small wheels. The trucks and steel framework which form the entire base of the car is painted and then the wooden floor is laid. The laying of the floor is done with all of the care of parquet floor laying.

The steel framework is moved into the shop on the rails. Huge carrying cranes lift the frame about from time to time. The car goes through the hands of four crews, the floor, erecting, trimming and painting crews. By the time it has gone from one end of the shop to the other it has evolved from a dull steel framework through various "skeleton" stages, to the finished product.

Kinds of Woods Used.

When the workmen begin to place the supports for the car roofs, the car takes on a weird appearance, something like the hull of an unfinished ship. The main framework is made of Southern ash, the floor of native oak and the wainscoting of Tennessee poplar. The head linings or wood veneer for the inner ceiling is of quarter-sawed red oak. The doors and sash are of cherry. Every pane of glass placed in the cars is imported German plate glass.

The chief innovations noticed in the new cars are the sliding doors in the motormen's cabs. Heretofore all doors in the cabs have opened inward, on hinges.

There is to be better ventilation in the new cars. Ventilation openings are under each socket into which the window slips when opened. The air comes from underneath the wainscoting of the car and circulates about warm heating pipes before it reaches the passengers. The ventilators in the roof of the car act as syphon drafts for the air to emerge all the time that the car is in motion.

Air Vent Area Large.

There are 26 air vents in each car, and these have been made twice as large as formerly. This gives a total air vent area of 64 square inches.

Another innovation in the new car is a push button placed on the sash at the extreme rear of the back platform. This will accommodate those who wish to stop a car without crowding to the button near the rear door.

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MAIN STEAM STATION RAIL EQUIPMENT

The trackage at the Main Steam Station was powered by third rail to facilitate unloading of railroad cars of coal by crane cars fitted with clamshell buckets.

The first Locomotive was original Snow Plow 20 modified for such use. It was replaced by newly-built Locomotive 20 in 1907. This equipment is described in more detail in the chapters on Service Equipment.

The original Crane was a Brown Hoisting Machinery Co. Model 315 with a 54 cu. ft. clamshell bucket. Equipment consisted of one G.E. C.O. 2001 electric motor, 80 h.p., and one R-27 controller. This crane was retired in 1948.

A hopper-bottom Gondola Car (trailer) was purchased in 1910 and given the number 6 in the service equipment series. It was built by the National Dump Car Co..

Length overall 37'8"; length over end of box 36'2"; length inside box 35'10".
Width overall 10'0"; width inside the box 9'7".
Height rail to top of box 8' 5 1/8"; sideboards 4' 0 5/8" deep.
Arch Bar Trucks, 5'4" wheelbase, 33" chilled steel wheels. Truck centers 25'8".
Weight 36,500 lbs. Capacity 80,000 lbs.

This car was retired in 1947.

An American Hoist & Derrick Co. Model 258 Crane, serial number 1243, was acquired in September 1924. This was a standard 25-ton locomotive crane minus the steam boiler and engine. Clamshell bucket capacity was 2 cu. yds. TCRT performed the electrical and mechanical work necessary to make this crane electrically operated. The equipment consisted of one G.E. C.O. 1812 motor and one G.E. R-164-A controller. This crane was sold with the steam station to Northern States Power Co. in 1954 and donated by NSP to the Minnesota Transportation Museum in 1968. As the crane was in deteriorated and inoperable condition it was scrapped during 1970.

An air-operated Side Dump Car (trailer) was purchased second-hand in 1942 from a steam railroad. The car was of all-steel construction and compressed-air operated; received on October 6th, 1942. The car was used for transferring coal from the new #7 coal bin to hoppers in the building. This car was sold with the steam station to Northern States Power Co. in 1954 and donated by NSP to the Minnesota Transportation Museum in 1968. The car was scrapped during 1970.

A new American Hoist & Derrick Co. Model 825-E, 25-ton, 75 h.p., electric locomotive Crane was purchased during the winter of 1946-1947. It was sold with the steam station to Northern States Power Co. in 1954. NSP Co. disposed of the crane in 1969.

SERVICE EQUIPMENT NUMBERS

As indicated in the section on Early Electric Cars a separate number series existed for **each type** of service equipment. About the time the Snelling Shops opened (1907) it was decided to consolidate the service equipment into one number system, beginning with the number 1. Due to eventual disposal of most of the original equipment it became rather simple to accomplish.

The 1907 U.S. Census reported 16 Work Cars, 4 Snow Plows and 1 Locomotive for a total of 21 cars. Apparently none of the original service equipment still in existence was counted. We can identify all of the 21 cars. The 16 Work Cars consisted of Work Cars numberered 7-19, Wire Cars numbered 3-4 and Wrecker-Crane number 21. The 4 Snow Plows consisted of numbers 22-25. The 1 Locomotive was number 20.

This is how the numbering system worked out.

The original Supply Cars	1-2	
New Wire Cars	3-5	(Early Wire Cars were 1-2)
Gondola Trailer	6	(Acquired 1910 for the Main Steam Station)
New Work Cars	7-19	(Early Work Cars were 1-6)
Locomotive	20	(Replaced old Snow Plow 20)
Wrecker-Crane	21	
Snow Plows	22-25	(25 may have been 21 originally)
Shifter Cars	26-28	(ex Selby Hill Counterweight "Pushers", converted from open cable grip cars built in 1890. Used by the Snelling Shops after the Selby Tunnel was built in 1907 to shift cars and trucks around the various shop buildings.)
Snow Plows	29-32	
UWC Work Car	33	
Baggage Car	34	
Rail Grinder	35	
Snow Plows	36-38	
Rail Grinders	39-40	(Purchased from Kerwin Machine Co.)

There is some confusion around 1909-1912 about use of the numbers 35 and 39. Mech. Dept. Maintenance Forms list a 35 Snow Plow in 1909, a 39 Snow Plow in 1910, 1911 and 1912, and a 39 Rail Grinder also in 1912. Here is a list of events taken from the Construction Journals.

1 Delivery Car was converted to 34 Baggage Car	May 1909
35 Rail Grinder was built new	November 1, 1909
18 Snow Plow was converted to a Rail Grinder	January 1910
36-38 Snow Plows were built new	March 1, 1910
39 Rail Grinder purchased from Kerwin Machine Co.	January 1911
13 Snow Plow converted to a Rail Grinder	May 1911
40 Rail Grinder purchassed from Kerwin Machine Co.	August 24, 1911

Perhaps 18 was originally intended to be renumbered 39.

Thus Switch Cars1-2 (ex 789 and 794) were renumbered 41 and 42 between 8-24-1911 and 11-1-1911 as newly-built Sand Cars 43-45 were completed 11-1-1911.

SERVICE EQUIPMENT PURCHASED

Kerwin-Detroit Rail Grinders **39-40** purchased from the Kerwin Machine Co., Detroit, Mich. 39 was acquired in January 1911 and 40 on August 24, 1911. See copy of advertisement. 15'7½" long; 7'4" wide; steel underframe. One G.E. 67 motor with one K-11 controller.

Electric Shovels **57, 60 and 73** purchased from the Thew Automatic Shovel Co., Lorain, Ohio. 57 acquired 3-30-1914, 60 acquired 4-6-1915 and 73 acquired 5-2-1917. All steel except cab. 27'0" long, 8'6" wide, bucket 1/3 cu. yd. capacity, weight 56,000 lbs. Four wheels, 24" diameter, 7'0" wheelbase; extra set of wooden wheels for work off the track. One G.E. CVC 116 motor of 20 h.p.; starting rheostat. G.E. #6 trolley base with 4" trolley wheel.

Yard Crane **74** purchased from the Brown Hoisting ~~Machine~~ Machinery Co., Bay City, Mich., 5-15-1917. 48'10" long with crane boom at 39'0" maximum radius; 10'0" wide; weight 66,455 lbs. Capacity 24,700 lbs. at 12'0" radius and 5,000 lbs. at 39'0" radius. Four wheels on 8'0" wheel base. One G.E. CQ2007G motor of 68 h.p. with one R-156-A controller. G.E. #6 trolley base with 4" trolley wheel.

Crane Car (locomotive type) **83** purchased from the Differential Steel Car Co., Findlay, Ohio, 2-15-1927. 44'0" long, 8'0" wide, all steel construction, weight 67,000 lbs. (later listed as 70,000 lbs.). Used primarily for track work; capacity 5 tons at 25'10" radius and 2 tons at 44'0" radius. National Coil Spring Arch Bar trucks, 5'8" wheelbase, 26" steel wheels, 25'10" truck centers. Four G.E. 275 motors of 60 h.p. each, 15:57 gear ratio, G.E. Type M Control with C-169-D master controller. U.S. #13 trolley base with 7" trolley wheel.

Electric Shovel-Skimmer-Ditcher **94** purchased from the Speeder Company, 6-15-1929. All steel construction. Cab 13'0" long, 31'6" long over boom and bucket of ½ cu.yd. capacity, 8'8" wide. Equipped with crawler treads plus detachable 20" steel wheels for rail travel. Weight 31,000 lbs. One G.E. 800 r.p.m. motor of 25 h.p., and G.E. CR-1003 controller.

Office DEPOT.

OTHER SERVICE EQUIPMENT

SHOP TRAILERS

Construction Journals 1907-1911

Work Order Date	Qty.	Type	For
November 1907	3	Steel	Snelling Shops Dry Kiln
November 1907	1	Wood	Snelling Station Coal Car
November 1907	1	Steel	Snelling Station Ash Car
December 1908	1	Steel	E.7th St. Station Ash Car
November 1910	1	Steel	Ash Car (Bemis single truck)
January 1911	1	Steel	Snelling Station Ash Car, similar to Snelling Shops Car (one Bemis truck)

January 1, 1916 Mpls. St. Ry. Valuation Report

One Refuse Car Trailer, Dirt and Ash Car, Gondola type: 16'0" long overall with a 15'0" long body, 6'7" wide, three 16" x 4'9" x 2'8" high hinged sections on each side, and equipped with one Special truck.

January 1, 1922 Mpls. St. Ry./St.Paul City Ry. Valuation Reports

Listed seven single-truck Trailers to which numbers were assigned for valuation purposes about 1927-1928.

84-85	Flat Cars, sideboards for Gondola, 23'9" long.
86	Closed Sawdust Car, 17'9" long.
87-88	Flat Cars, sideboards for Gondola, 23'9½" long. 88 was listed in 1939 as 23'9½" long, 6'6" wide, with sideboards 3'0" deep, and 450 cu. ft. capacity.
89	Flat Car, sideboards for Gondola, 16'1" long.
90	Refuse Car Trailer as per the Mpls. St. Ry. 1-1-1916 Valuation; however the Mech. Dept. record card indicates built by TCRT, 21'0" long, 6'6" wide, sideboards 3'0" deep, and capacity 400 cu. ft.

Additions through 1929

91	Gondola Car, 15'0" long, 6'6" wide, sideboards 2'8" deep, capacity 250 cu. ft.
92	Gondola Car, 10'8" long, 8'0" wide, sideboards 2'8" deep, capacity 200 cu. ft., mounted on one Brill 04 truck (no motors) for handling coal at Nicollet Station.
93	Gondola Car, 16'0" long, 6'6" wide, sideboards 2'8" deep.

April 1936

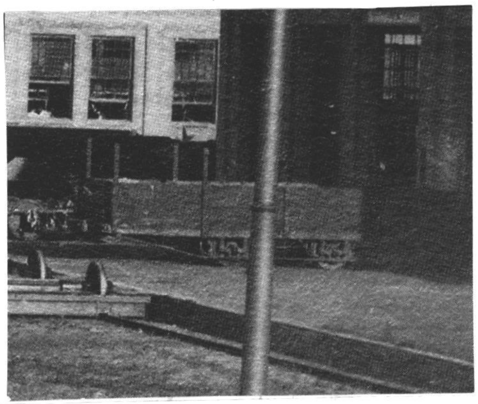
One Flat Trailer was mentioned as having a Bemis single truck. Some of the other trailers had Bemis single trucks as well.

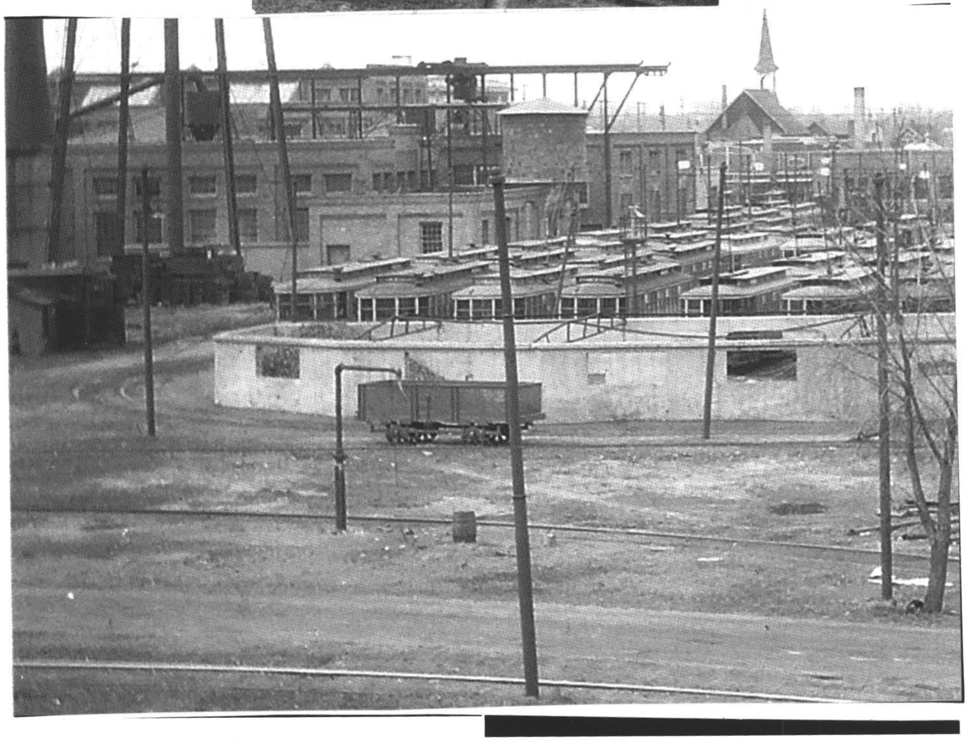
SHOP TRAILERS

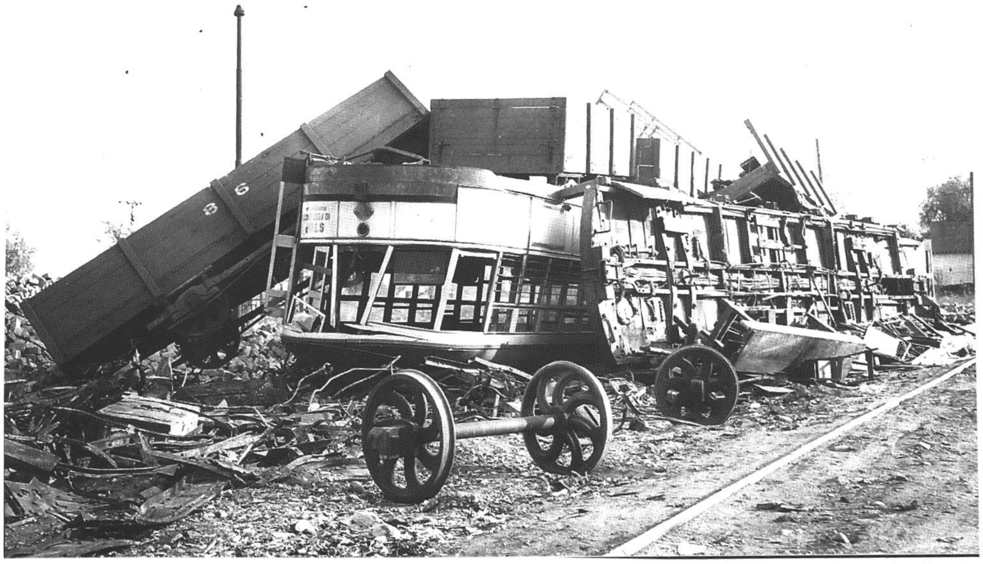
Refer to photographs [redacted]

Note that the one early photograph shows the car with a horsecar pedestal-mount truck.

The scrap pile photograph was taken before the cars were burned 11-21-1952. Cars involved were Lightweights 2007,2012,2014; Work Car 48; Gondola Trailers 84,86,93;Flat Trailer 85. Some one must have noted the good condition of the three gondola boxes; purchased them and had them removed before the burning took place.







DOUBLE DECK CARS

THE HISTORY OF THE DOUBLE-DECK CAR
IN THE TWIN CITIES

The first drawings for a proposed double-deck car were dated July 1903. The standard car design was modified by:
1) moving the trolley base to a stand at the extreme rear;
2) reinforcing the deck roof and installing 12 transverse four-passenger benches on the roof;
3) laying a walkway on the lower roof on either side of the benches (about 15" from the top of the deck roof);
4) installing entrance steps with a single pair of folding gates on the front platform together with a straight stairway mounted transversely along the front bulkhead from the steps to the roof; and
5) enclosing the super-structure with a waist-high gas-pipe framework and wire screening.

The upper deck was open to the weather and designed to be removed during the winter months with the car being restored to its normal appearance.

The car selected was number 1092, being completed July 1, 1904, before work was begun on an earlier order for cars 1042-1091. Upon completion the car was placed in sightseeing and charter service. Trial runs were reported on 8-31-1904 and 9-27-1904.

The Street Railway Journal issue of November 16, 1904, reported that this type of double-deck car was found unsatisfactory, due largely to the fact that it did not offer sufficient protection from the weather, and was not put into regular service.

A full height framework of 1" gas pipe bolted to 2½" x 5" sills, resting on special fittings built permanently in the roof, was erected, supporting a canvas canopy roof and side screens, with waterproof folding curtains hung between the side pipe-posts. Overall height was 16' 4" compared to 11' 5" for a standard car. With the upper deck in place the car was reported to weigh 52,000 pounds, seating 99 persons and accommodating 65 persons standing.

Presumably this car was operated over the line to Lake Harriet as the grade of 900 lineal feet of track was lowered at the Cottage City bridge over the right-of-way during 1905. This also involved construction of the concrete retaining walls and steps at the bridge which were completed simultaneously.

Plans for a more substantial double-deck car were begun in October 1905. S.W.O. 8737 of that date provided for building one double-deck 'Tonka' car. A single track line from Lake Harriet to Excelsior on Lake Minnetonka had been opened during September 1905; double tracking was scheduled for the following spring. This car was number 1145, completed May 25, 1906.

Contemporaneous car-building was authorized as follows:
November 1905: S.W.O. 8745 Build 20 standard carbodies (1146-1165);
January 1906: S.W.O. 8750 Build 20 standard carbodies (1166-1185);
February 1906: S.W.O. 8759 Build 10 double-deck cars (1186-1195).

During March 1906 S.W.O. 8745 was changed to double-deck cars.

Quoting from an article in a 1906 issue of the Street Railway Journal:

"The company is now constructing 30 double-deck cars of the type shown in the acc- ompanying illustrations for service on the interurban line to Lake Minnetonka, on which during the summer months the traffic is extremely heavy. [The 30 cars would be 1146-1165, 1186-1195.] The cars are being built in the shops of the company under the immediate supervision of W. J. Smith, master mechanic of the system. As with the previous car of this type, the upper deck is so construct- ed that it can be removed from the lower portion of the car during the winter when its use is not required, but it is built in a much more substantial manner, its construction being similar to that usually employed in the ordinary closed car. The sides and ends are sheathed in the usual manner up to a rail corresponding with the arm rest. The side posts contain curtain grooves and pantasote curtains fitting close up to the posts and provided with frequent stiffening rods effectually closing the openings against the entrance of water during a rain storm. The front windows, however, are provided with sash fitted with glass after the manner followed in construction of the lower portion of the car body. Composite wood and steel carlines extend overhead from opposite side posts and form a support for purlines over which the canvas top is stretched. The upper compartment is provided with slat seats running crosswise of the car and resting directly on the roof of the lower portion, which is provided with a grass carpet. The seats, however, do not extend the full width of the car, but space is reserved on one side for an aisle. The second deck is well lighted by lamps placed over each window opening just above the curtain, and other lamps supported by carlines in the front and rear. The upper deck seats 65 people (13 five-passenger benches)."

"One of the illustrations shows the stairway over the front vestibule, by means of which access is gained to the upper portion of the car. [The front gates on the stairway entrance were controlled by the motorman.] No stairway is provided in the rear, the idea being that the motorman will observe people passing to the upper deck, while the conductor will take care of those in the lower portion of the car. Just in front of the stairway and immediately over the motorman's cab is a comparatively large space which will be utilized for the storage of baggage and lunch baskets of the picnic parties. The upper deck adds about 5,000 pounds to the weight of the car, while the height of the car with the second story added is 16' 8". As the trolley wire is placed 20 feet above the track there is a clearance of 3' 4" between the trolley wire and the roof of the car. The ordinary type of trolley pole will be used."

"To provide for the addition of the upper deck and the load on the roof the body framing was built somewhat heavier than otherwise. The width of the corner posts was increased and the roof carlines were reinforced, so that with the full load in the upper deck the deflection by actual test does not exceed 1/16". At every post the wood carlines are reinforced by 3/4" x 2 1/2" steel carlines. In the forward portion of the car, where the presence of the [destination] sign necessitates an extra width of upper-deck window, the steel carlines are 1" x 2 1/2"."

Double-deck car 1145 was placed on the 20-mile run to Lake Minnetonka from Minneapolis which was advertised extensively by the company.

TAKE NEW "DOUBLEDECKER" TO LAKE MINNETONKA

Latest, Newest, Up-To-Date Electric Car In All America

**Leaves Hennepin Ave. and 6th St., Minneapolis,
for Excelsior and Big Island Park at 6:04 a.m.
and every two hours to 10:04 p.m.**

This occurred during the summer of 1906 when construction crews were hard at work double-tracking the Lake Minnetonka line, building dock facilities at the lake for the newly-built steamboats launched in May, as well as construction of Big Island Park.

Construction of the Queen Ave. bridge over the Harriet right-of-way had been completed during 1905. To accomodate movement of the steamboats from the 31st St. Shops to Lake Minnetonka, as well as the operation of double-deck cars, the grade of 1400 lineal feet of track was lowered at the bridge during 1906.

Meanwhile the car-building program was being completed. In August 1906 the description of S.W.O. 8745 (1146-1165) and S.W.O. 8759 (1186-1195) had been changed back to Standard Carbodies. Completion dates were: cars 1146-1165 May 21,1906 thru July 3,1906; cars 1166-1185 June 30,1906 thru August 14,1906; and cars 1186- 1195 August 11,1906 thru August 14,1906.

However during August 1906 expenditures were charged against new S.W.O. 3379 entitled "Equip Car 1146 With Double Deck". The next month the description was changed to read "Equip One Car With Double Deck". Only small dollar amounts were charged against this S.W.O. Just recently a 1906 photograph has appeared of car 1160 with the 1904-style upper deck. It appears that the upper deck, minus the canvas canopy roof and side screens, was bodily transferred from 1092 to 1160, plus some minor modifications. Car 1160 was equipped with Baldwin #3 trucks, 4 G.E. 87 motors (60 h.p. each) and G.E. Type M control (C-38 master controller), suitable for fast service on the Lake Minnetonka line. Perhaps this was intended as an experiment to compare the two styles of upper deck for Lake Minnetonka service.

The author of a 1912 Electric Railway Journal reported "It was found that people were timid about riding on the upper deck too near the trolley wire, and it will be seen from the accompanying illustrations that the two decks were completely separate, as access and egress to the upper deck was only to be had by the front stairway, which ran direct to the ground. One great objection was apparently the exposure of the upper deck passengers to occasional showers. When rain came everyone wanted to get into the shelter of the lower deck." "After about three weeks of this service [summer 1906 on the Lake Minnetonka line] both cars [1145 and 1160] were taken off the road and reconverted to single-deck cars, the management deciding that the double-deck principle was not suitable to conditions existing in the Twin Cities."

The author of a 1943 article in an electric railway publication stated that "during the summer of 1907 both double-deck cars were again used on the Lake Minnetonka line. Fears arose that the cars were top-heavy as most of the passengers wanted to ride upstairs. The heavy weight increased wear on the track and overhead requiring extra maintenance. Trolley wire had to be raised which in turn created problems for the standard cars. The difficulty and expense of maintaining the line for passage of both standard and double-deck cars soon brought the experiments to an end." The author also mentioned a total of three double-deck cars having been built.

How much of the information in the 1943 article is factual is uncertain. Company brochures and records give no hint of 1907 operation of double-deck cars. The 1912 article previously quoted together with S.W.O. descriptions indicate that TCRT management had decided against building more double-deck cars. Mechanical Dept. records give no clues as to when each car was permanently reconverted to single-deck. These records provide only repainting dates: 1092 12-31-1908; 1145 3-25-1909; and 1160 7-18-1908. Obviously it was not necessary to repaint the entire car when removing the upper deck and front entrance.

All three cars continued in service as standard cars. 1092 was sold for scrap in 1936, while 1145 and 1160 were dismantled and burned in 1938.

Office DEPOT®

NEW GARS FOR TONKA LINE
Minneapolis Tribune (1867-1908); Mar 20, 1904;
ProQuest Historical Newspapers Minneapolis Tribune (1867-19
pg. 6

NEW CARS FOR 'TONKA LINE

THEY COULD NOT BE USED ON INTERURBAN ROUTES, AS ANNOUNCED.

Officials of the Twin City Rapid Transit company are a little put out over the fact that one of their secrets has become partly public property.

A Minneapolis reporter discovered that the street railway company was building a new style of car at the Minneapolis shops, cars with double decks, and it was immediately decided that these cars were to be used for observation parties and that sight-seers could make the tour of Minneapolis and St. Paul on the upper decks.

This story is only partly true and, while the street railway officials smile and say nothing, it is known that this is but a hint of their gigantic plans. A moment's thought and it would be realized that these cars could not travel to St. Paul on the old interurban lines and that they could not make the trip to Minnehaha Falls nor travel on the Como-Harriet lines, as these are constructed so that it would be impossible for a double-decked car to go under the railroad bridges.

The fact of the matter is that these cars are intended for the Minnetonka line, to be used only in the summer time. They will be run regular when the Minnetonka line is finished, which will be in the near future, and Minnetonka residents will have the pleasure of riding to the city in the morning and returning in the evening on these elegant cars. It is supposed that there will be a grand rush for the seats on top. There will be no bridges to interfere with the success of this innovation of the street railway company, such as would be the case on the Lake Harriet line, where there is a low stone bridge which would sweep all the passengers from the top, in case an attempt was made to run it through.

EXPERIMENT WITH DOUBLE-DECK CAR
Minneapolis Tribune (1867-1908); Aug 27, 1904;
ProQuest Historical Newspapers Minneapolis Tribune (1867-19
pg. 9

EXPERIMENT WITH DOUBLE-DECK CAR

STREET RAILWAY COMPANY BUILDS CAR WHICH MAY BE FORERUNNER OF MANY MORE OF THE SAME SORT—WILL BE TESTED SOON.

The Twin City Rapid Transit company has nearly completed a new double-decked street car, which in beauty and general design, is far superior to anything in its line ever seen in this city or the northwest.

As soon as all of the equipments have been put on it will be placed in active service on one of the popular lines of the city.

Its construction has been more in the nature of an experiment than anything else, but if it is found to be popular and can be operated successfully, more will be built next summer.

As the car stands on the track the roof is within three feet of the trolly wire. The lower apartment or deck is built and arranged like any other of the large cars. In the front portion, however, there is a stairway leading to the upper deck. This upper deck is all open and is supplied with long seats extending almost across the car Overhead is a light roof and around the enclosure, to protect the passengers from injury, is a heavy wire netting.

In color the car is the same as all the other Minneapolis cars and in power will have about the same horse power as the large cars.

In speaking of the car Vice President Goodrich of the street car company said: "The car was built as an experiment. If it strikes popular fancy more will be built next summer.

"I first saw double decked cars in Europe where they are fairly popular and I imagined Minneapolis might like the same thing. In this country, however, double deckers have been condemned on several different occasions by people of eastern cities. Washington had them for a time but I believe they didn't prove popular.

"You see, therefore, my company is merely taking a chance in building this new car, but it is hoped that it will be a success and popular."

WIRES TOO LOW FOR NEW CAR
Minneapolis Tribune (1867-1908); Aug 31, 1904;
ProQuest Historical Newspapers Minneapolis Tribune (1867-1
pg. 9

WIRES TOO LOW FOR NEW CAR

Street Railway Officials Have Test of a Big Double Decker Electric.

ONLY AN EXPERIMENT

Minneapolis People May and May Not Have Privilege of Riding on Top to the Lakes.

Many officials of the Twin City Rapid Transit company, including President Lowry, Vice-President Goodrich and General Manager Hield, were present at the street car shops at Nicollet avenue and Thirty-first street yesterday when the big new double deck car was brought out for a test.

After running the car through the yard and back again, during which time much trouble was experienced with the trolley wires, the car was taken back to the barn.

Mr. Goodrich expressed himself as well satisfied with the test as far as it went. Many things were noticed which will have to be changed before the car reaches the desired practicability.

Mr. Hield is of the opinion that the trolley wires on all lines where the double decker will be used will have to be raised. This is certainly true of the wires in the yards, which had to be held up by poles to permit the cars to pass underneath.

"It is not intended," said Mr. Hield, "to use these double deck cars on all lines. If the car, after a thorough test, appears thoroughly practicable more cars will be built. Until we are sure on that point no further steps will be taken toward building any more double-deckers."

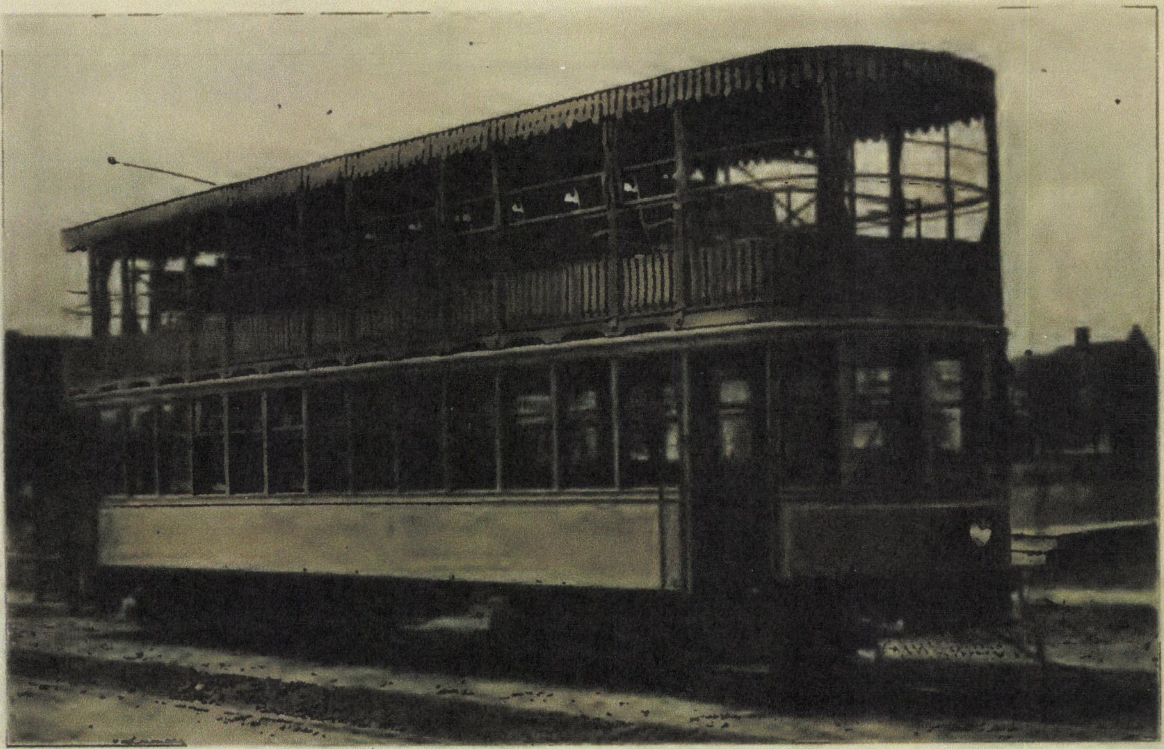
Charles J. Glidden, the automobilist, who has toured almost every civilized country in the world, was an interested spectator as the guest of Mr. Lowry.

Mr. Gliden stated that in all his travels he never saw a car built along anywhere near as magnificent lines as this new car. He believes that President Lowry and his associates have perfected a street car which will do a great deal toward relieving the congested conditions on busy lines, and that after its utility is fully proved the idea will be adopted by street rail companies in other cities.

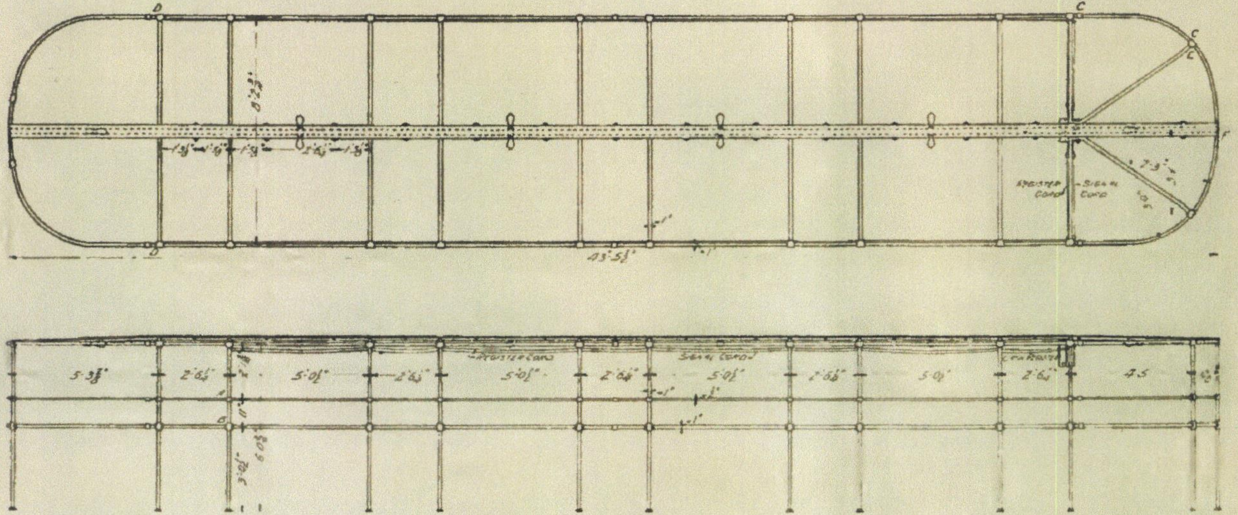
Further tests will be made in a few days, the result of which will determine whether Minneapolis people riding to the parks and nearby lakes next summer will be able to sit above the dust of the street and view the scenery from the upper deck, or whether the old order of things will be continued.

DOUBLE-DECK CAR FOR TWIN CITIES.

The Twin City Rapid Transit Co. has designed and built a double deck trolley car, which we illustrate herewith. In designing this car one of the principal features stipulated was that the lower car, both in appearance and utility, should correspond with the standard car in use. Another requirement was that the upper structure might be removed, leaving the lower car complete for operating as a single-deck car; the reason for this being that these cars would be used for excursion business during the summer months, and on account of the severe weather in winter months the upper seats could not be utilized.



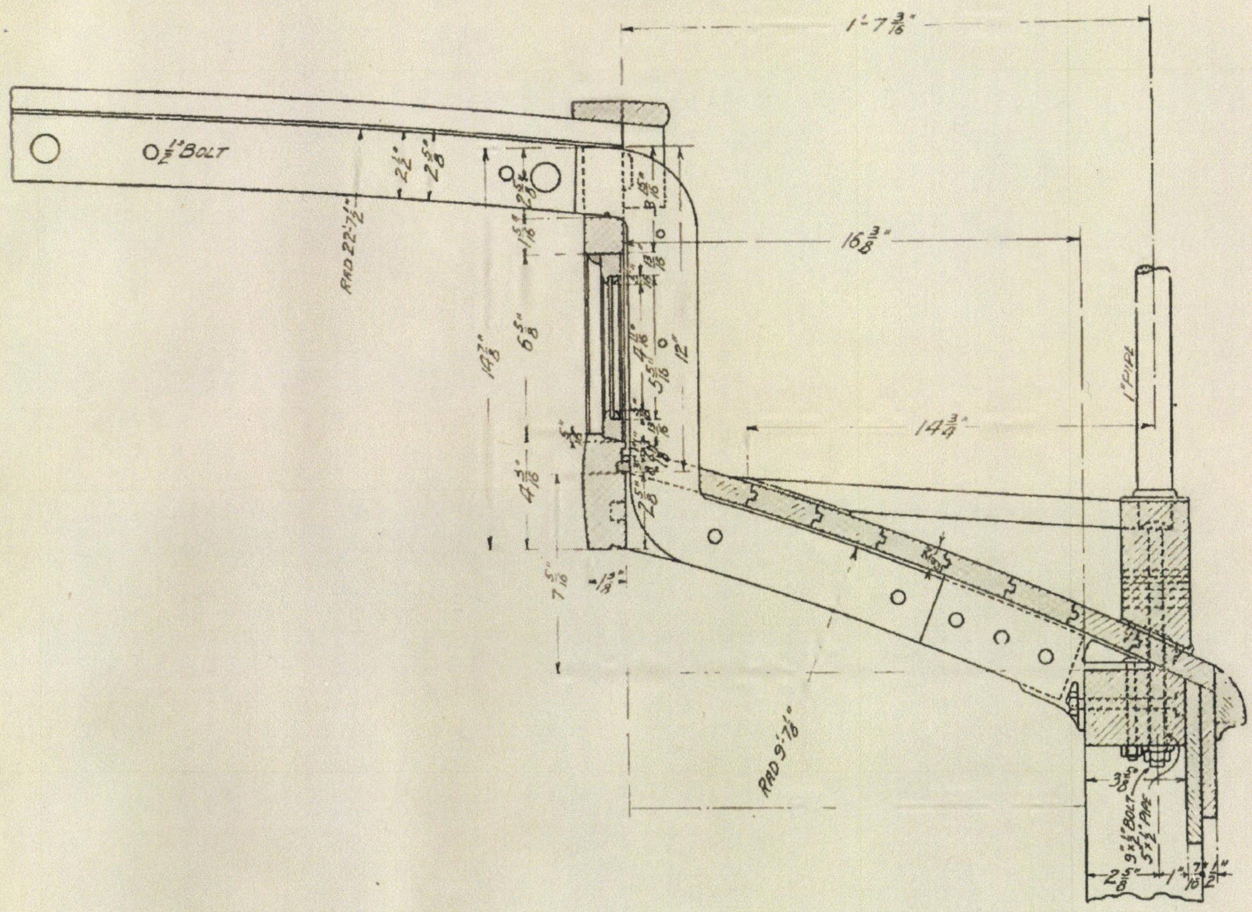
NEW DOUBLE DECK CAR, TWIN CITY RAPID TRANSIT CO.



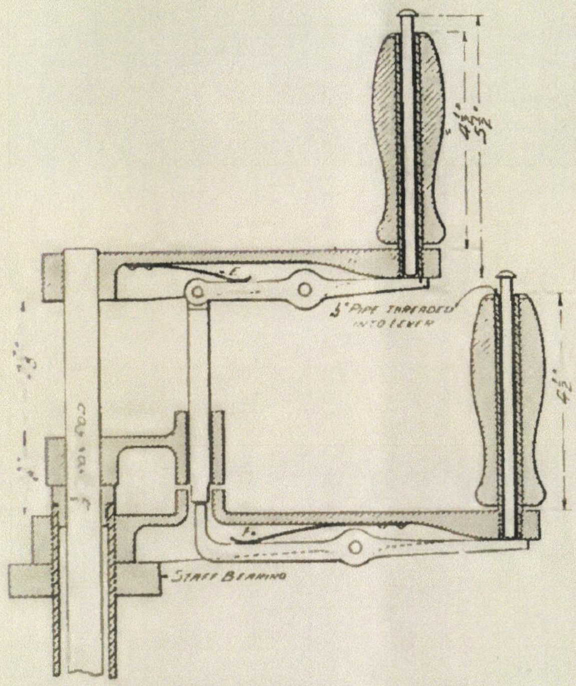
PLAN AND ELEVATION OF UPPER DECK STRUCTURE.

The height is limited by the overhead construction, entrance to carhouse and viaducts, and on account of the height required by a double-deck car it was desirable to make the appearance of the upper work as light as possible.

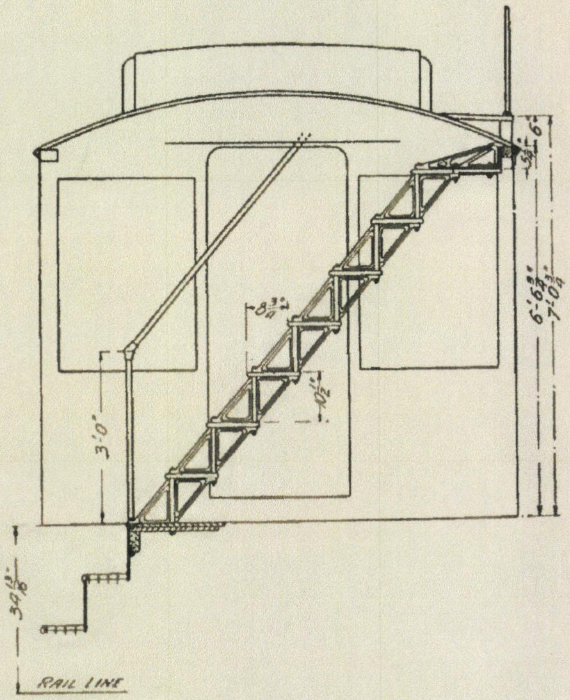
The lower car construction is identical with that of the standard car, with the exception that the trusses and cross-sills are heavier. The roof is reinforced with iron carlines, ½x2½ in., placed over each side post, and provided at the ends with a cast shoe bolted to the side plate. The roof boarding is heavier, and the runways at the sides are provided with open racks to protect


1'-7 3/16"
O 1/2" BOLT
RAD 22'7 1/2"
16 3/8"
14 3/4"
1" PIPE
12"
RAD 9'7/8"

ROOF CONSTRUCTION OF DOUBLE-DECK CAR.


1/2" PIPE THREADED INTO LEVER
STAFF BEARING

INTERLOCKING HANDLES FOR FRONT AND REAR GATES.


6'-6 3/8"
7'-0"
3'-0"
RAIL LINE

STAIRWAY TO UPPER DECK.

the roof covering. The roof over the front vestibule, as well as the overhang of the deck roof, is made to be removed when the upper deck is used, the front vestibule then being covered by a platform having a hatch with a stairway, and providing a passage from the stairs to either runway, making an easy access to both ends of the seats, which are placed crossways on the deck roof. These seats accommodate four persons comfortably. The stairway runs transversely at the rear of the front vestibule, and is accessible only to passengers entering at the front of the car. Both front and rear entrances to the car are made by two-tread steps, and are provided with standard safety gates.

The upper structure consists of a frame work of 1-in. gaspipe bolted to a 2½x5-in. sill, which rests on castings built permanently into the roof and is held by bolts passing through this casting and through the plate of the car. The roof is arched 2 in. and at the ridge running from front to rear are two 6-in. planks, the lower cutting in between the piping of the frame, and The upper continuous. Toward the rear a short plank, about 10 ft. long is added on each side for supporting the trolley base. On the under side of this ridge-plank are mounted signal bell and light equipments.

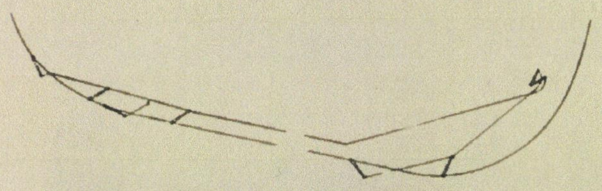
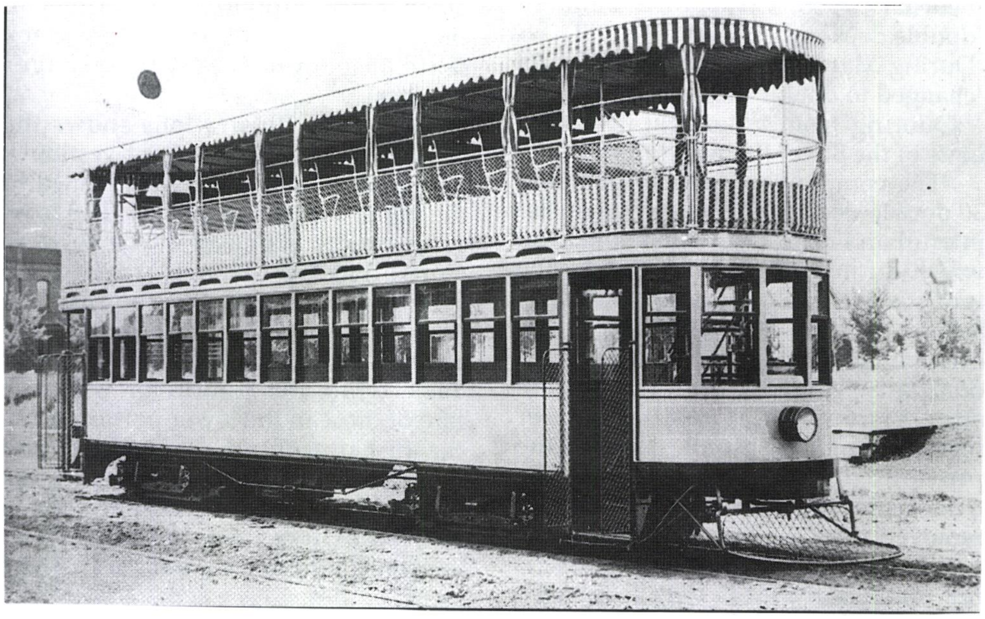


DIAGRAM OF GATE LEVERS

The top has a covering of awning material, and above this is one thickness of painted ducking. A strip of awning material 18 in. wide is placed just above the sills, and the remaining space may be closed by sliding curtains, which are normally strapped to the posts. The pole side is entirely closed by wire screens, and the remaining space, to a height of 3 ft.; at this point, is a heavy hand rail, and about one foot higher, a light guard rail.

The equipment complete weighs 26 tons and will seat 48 persons on the upper deck and 51 below, with standing capacity below of 65.

The car is mounted on Brill trucks, with four GE-57 motors, geared to about 26 miles per hour.



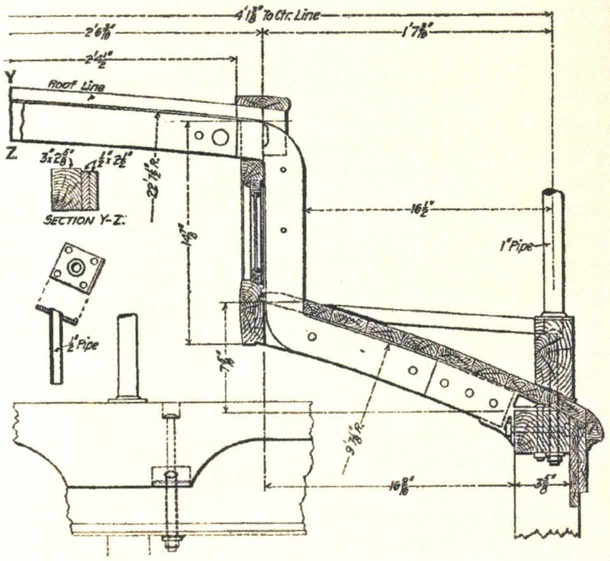
A NEW TYPE OF AMERICAN DOUBLE-DECK CAR

An interesting attempt toward the adaptation of the double-deck car principle to American street railway operating conditions has recently been made at Minneapoli , Minn., in the introduction of a novel type of convertible double-deck car. The need of better facilities for handling the heavy summer traffic of the operating company, the Twin City Rapid Transit Company, between Minneapolis, St. Paul and the two important summer resorts reached by their lines, has for some time been felt, and the new design of car described below was suggested as perhaps more convenient and flexible in operation than the trail cars originally in use.

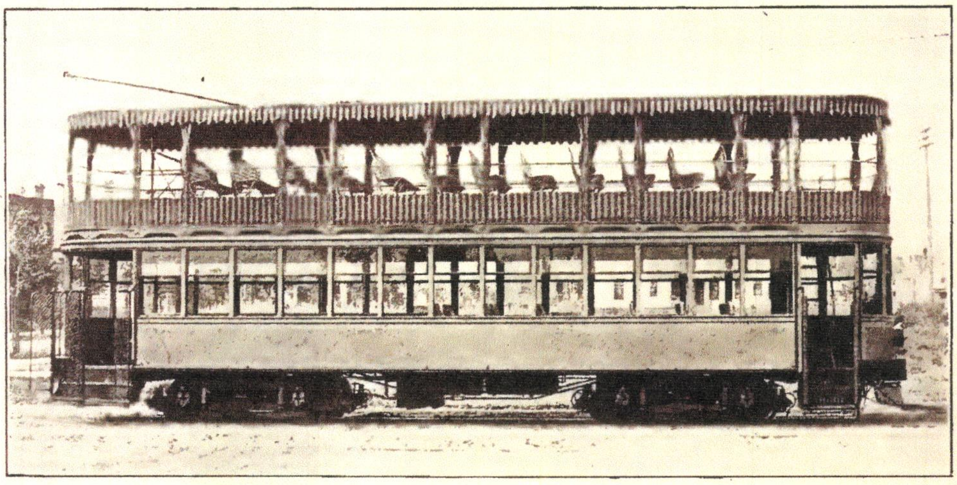
The principal details of the new car are shown in the accompanying view and drawings. Perhaps the most novel feature is the construction of the roof of the lower, or closed, part of the car. One of the principal requirements of the design was that the lower part of the car should correspond, both in appearance and utility, with the standard car in use, and that the upper, or open, structure might be removed, leaving the lower car complete for operating as a single-deck car. The reason for this is that these cars will be used for the excursion business during the summer months, while, on account of the severe weather in Minnesota in winter months, the upper seats could not be utilized in any case.

It is interesting to note that it is found that this car will seat forty-eight people on the upper deck, in addition to the capacity below of fifty-one seated and sixty-five standing. This is a remarkable achievement for a 45-ft. car. The entire weight of the car and equipment proves to be only about 26 tons.

The construction of the lower portion of the car is identical with that of this company's standard car, which was fully described and illustrated in the March 1, 1902, issue of the STREET RAILWAY JOURNAL. As an exception, however, the trusses and cross sills are built heavier, and the roof is heavily reinforced with iron carlines, ½ in. x 2½ ins. in section, placed over each side post, and provided at the ends with a cast shoe, bolted to the side plate, to provide the firmest bearing. The roof boarding is, of course, much heavier to withstand the walking thereupon, and the runways at the sides of the deck are provided with open-rack walkways to protect the roof covering. The bow roof over the front vestibule, and also the overhang of the deck roof, is so made as to be removable when the upper deck is used for passengers; the front vestibule is then covered by the special platform, shown above the cross section, in the drawing, having a hatch with a stairway, and so arranged as to provide a passage from the stairs to either runway. This affords easy access to both ends of the seats used upon the upper deck, which are placed crossways on the deck roof. The stairway runs transversely, as shown in the front elevation, at the rear of the front vestibule, and is accessible only to passengers entering at the front of the car. Both front and rear entrances to the car are made by two-tread steps, and are provided with

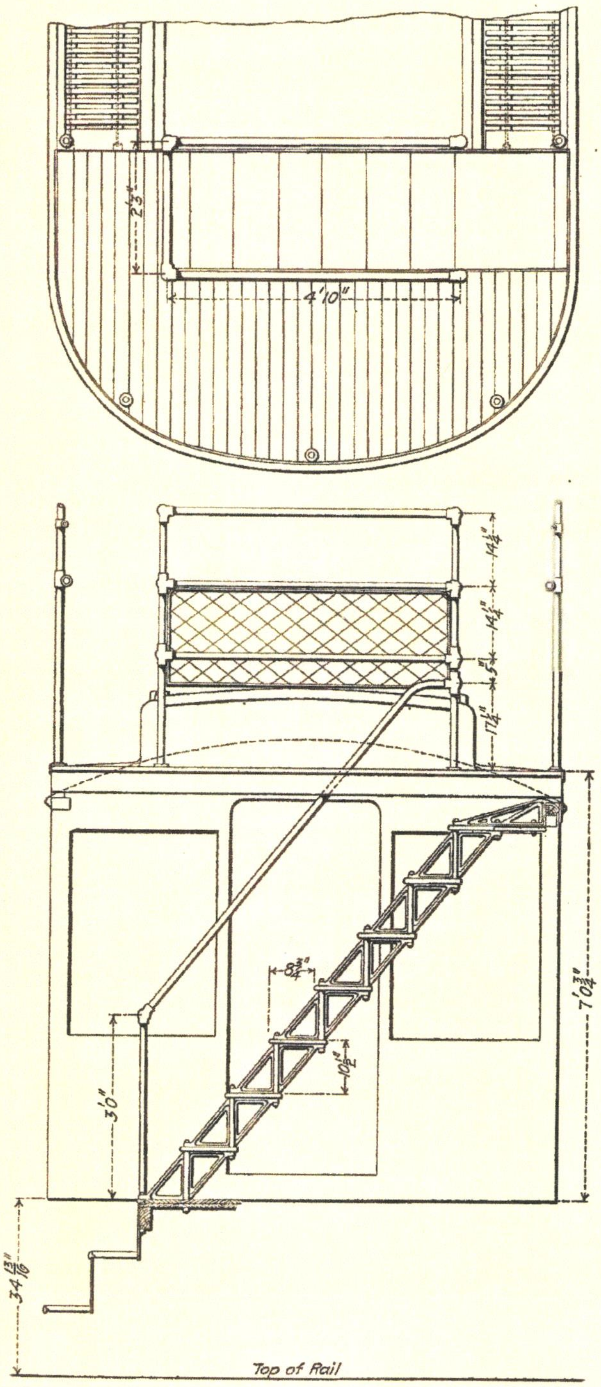


PART SECTION OF ROOF TO SHOW METAL CARLINE CONSTRUCTION AND SPECIAL ATTACHMENTS OF UPPER-DECK SIDE-PLATES TO ROOF



APPEARANCE OF THE NEW TYPE OF CONVERTIBLE DOUBLE-DECK CAR FOR TWIN CITY RAPID TRANSIT COMPANY standard double safety gates, used by the Twin City Company.

The height permissible for the upper deck construction was limited by the overhead line construction, and entrances to car houses and viaducts. On account of the height required by a double-deck car in any case, it was, of course, furthermore, desirable to make the appearance of the upper work as light as possible. The upper structure consists of a frame work of 1-in. gas pipe bolted to a 2½-in. x 5-in. sill, which rests on special fittings built permanently into the roof, providing an opening down through the plate of the car framing, as shown in roof section drawing. The sill is held by bolts passing down through this casting and bolted below.



PART END ELEVATION AND UPPER-DECK PLAN OF THE MINNEAPOLIS DOUBLE-DECK CAR, SHOWING DETAILS OF STAIRWAY UPON FRONT PLATFORM

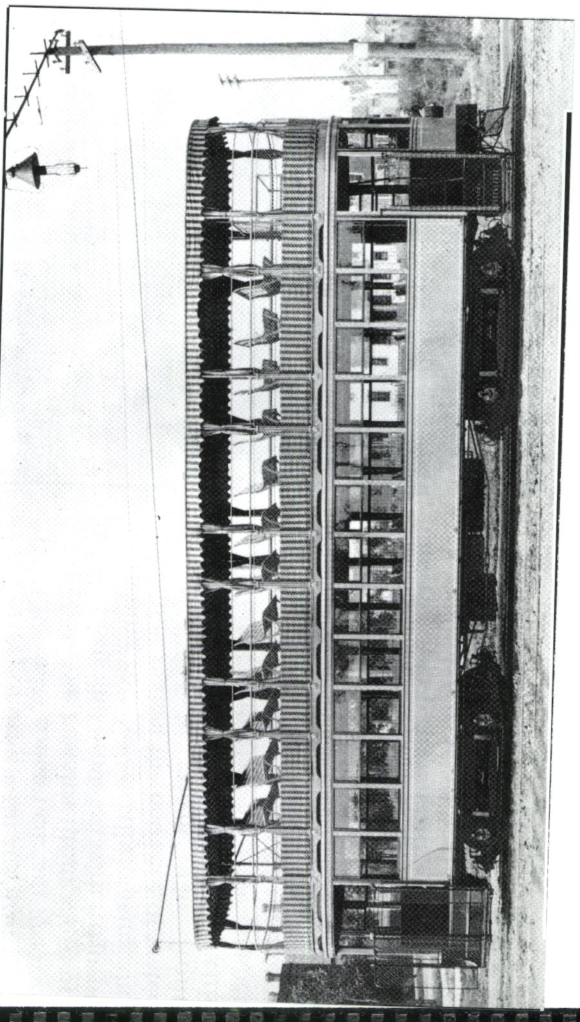
The canopy frame work is arched 2 ins., and at the ridge running from front to rear are two 6-in. planks, the lower one cutting in between the piping of the frame and the upper continuous. Toward the rear, a short plank, about 10 ft. long, is added on each side for supporting the trolley base. On the under side of this ridge plank is mounted the signal bell and lighting equipment.

The top has a covering of awning material, and above this is one thickness of painted ducking. A strip of awning material 18 ins. wide is placed just above the sills, as shown in the illustration, and the remaining space may be closed by sliding curtains, which are normally strapped to the posts. The pole, or left hand, side is entirely closed by wire screens, while on the right side the space is thus screened to a height of 3 ft. At this point is a heavy hand rail, and about one foot higher there is a light guard rail.

As above stated, the seats upon the upper deck are arranged crosswise upon the deck elevation. Each cross seat will accommodate four persons comfortably. Their construction is indicated in the view, consisting of cast-iron end frames with slat filling, as shown, so as to withstand the effects of rain in case the curtains are not drawn. The seats are easily approached; the stairway to the upper deck having only eight steps of 10½-in. rise each, while the rise from the side walkways up on to the deck where the seats are located is a single step of about 15 ins.

The car was built by the company at its large repair shop in Minneapolis. It is mounted upon Brill trucks, and is equipped with four General Electric Company type 57 motors, geared to about 26 miles per hour. Acknowledgment is due to W. J. Hield, general manager of the Twin City Rapid Transit Company, for this information.

◆◆



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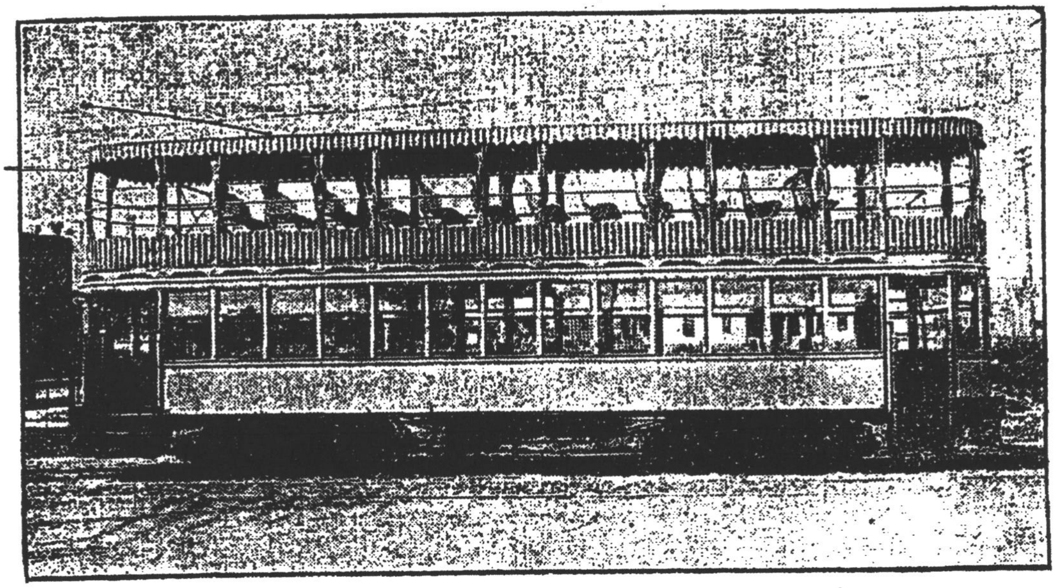
PV119ED

DOUBLE DECK CARS WILL ADD TO DELIGHT OF MINNETONKA TRIPS
Minneapolis Tribune (1867-1908); Feb 23, 1905;
ProQuest Historical Newspapers Minneapolis Tribune (1867-1922)
pg. 8

DOUBLE DECK CARS WILL ADD TO DELIGHT OF MINNETONKA TRIPS

NEW TWIN CITY SUBURBAN LINE WILL BE EQUIPPED WITH ROLLING STOCK AS FINE AS ANY IN THE COUNTRY.

PALACE CARS WITH ROOF GARDENS



Street Railway Company's Standard Car Equipped With Double Deck, for Service on New Minnetonka Line.

Double-deck cars will contribute to the delights of travel on the new electric line to Excelsior which the Twin City Rapid Transit company expects to have in operation by July 15.

These cars will be of the identical pattern of the present standard cars in use on all lines, the upper deck being a handy attachment which can be put on or off to suit the convenience of the company.

ARE NOT TOP-HEAVY.

The first thought that arises after viewing the "double-decker" is that it may prove top-heavy, but such is not the case. All of the standard cars constructed during the past year have been made heavy and substantial for the express purpose of accommodating a second story. Every possible experiment to test the desirability and safety of the new style car was made last season, and it was found to be entirely satisfactory.

The simplicity of the arrangements for converting a standard car into a double-decker will enable the company to equip any number of cars with roof gardens, and it is expected that seats on the upper decks of cars bound for Minnetonka will be at a premium in fine weather.

There will be no smoke or dust to mar the pleasure of patrons of the double-deckers, through the beautiful country traversed by the new line, and the details of construction to insure the maximum of comfort to passengers are now being worked out by General Manager Hield.

There are but two obstacles in the path of the double-deck cars between the city and the lake, and they are the two bridges at Lake Harriet. The old wooden bridge a short distance beyond the Harriet station is to be torn down and replaced by a modern structure, and this matter is now before the park board for disposition.

The bridge will be high enough to admit of the free passage of double-deck cars, according to the Rapid Transit people's understanding with the board.

The other obstacle is the Cottage City bridge, a substantial structure whose difficulties will be obviated by the company lowering its tracks at that point about four feet, which will allow the double-deck cars sufficient room to pass under.

TRACKS WILL BE LOWERED.

As there is a grade to be overcome by cars bound for Harriet after leaving the cemetery, the lowering of the tracks to accommodate the double-deckers will be an improvement which can be made at comparatively small expense.

"Our double-deck car is simply our standard car with a second story," said Mr. Hield. "We tried it out thoroughly last season, and it meets every requirement. We are anxious, of course, to make our new Excelsior line a model of high-class construction in every detail, and we are still considering minor points relative to the combination car.

"We will certainly put on very fast cars to Minnetonka, but our roadbed will be as level as a floor, and the line as straight as an arrow for the most part. We are still somewhat in doubt as to the exact route we will take from Hopkins, but of one thing there is no doubt, it will be a direct line."

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CITY NEWS
Minneapolis Tribune (1867-1908); Jun 10, 1905;
ProQuest Historical Newspapers Minneapolis Tribune (1867-1922
pg. 4

CITY NEWS

BRIDGE

Will Be Built Over Tracks at Hopkins for New Minnetonka Electric Line.

Double Deck Cars Will Be Thoroughly Tested and Put on Suburban Service.

Location of the New Street Car Bridge at Fort Snelling Has Been Decided.

There will be no dangerous grade crossings to mar the pleasure of a trip to Lake Minnetonka on the new Excelsior line of the Twin City Rapid Transit company.

The network of railroad tracks at West Minneapolis (Hopkins) owned by the Minneapolis & St. Louis, the Milwaukee and Great Northern roads will be bridged by a first class structure, which will entirely obviate the grade crossing difficulty.

Assurance that this important safeguard of the public would be made was given by Vice President Goodrich of the Transit company yesterday.

DOUBLE DECK CAR.

"We are nearly ready to begin a series of thorough experiments with the double-deck car which we have designed for the Minnetonka as well as local service," said Mr. Godrich. "It will be given a most thorough test in practical operation, and every change needed to bring it to the highest point of efficiency will be made before it is adopted.

"While a few matters remain to be adjusted before we can install the double-deckers we are confident that these will be overcome. The long distances to be traversed between the cities and the beautiful country threaded by our lines makes the double-deck style of car peculiarly adapted to this branch of the service.

"We have planned to operate the double-deckers in three trains, three cars to a train, for the Minnetonka service. If these cars prove the attraction to our patrons which we are led to believe we will undoubtedly build a number of observation cars to operate between the principal points of interest in the Twin Cities and to the lakes.

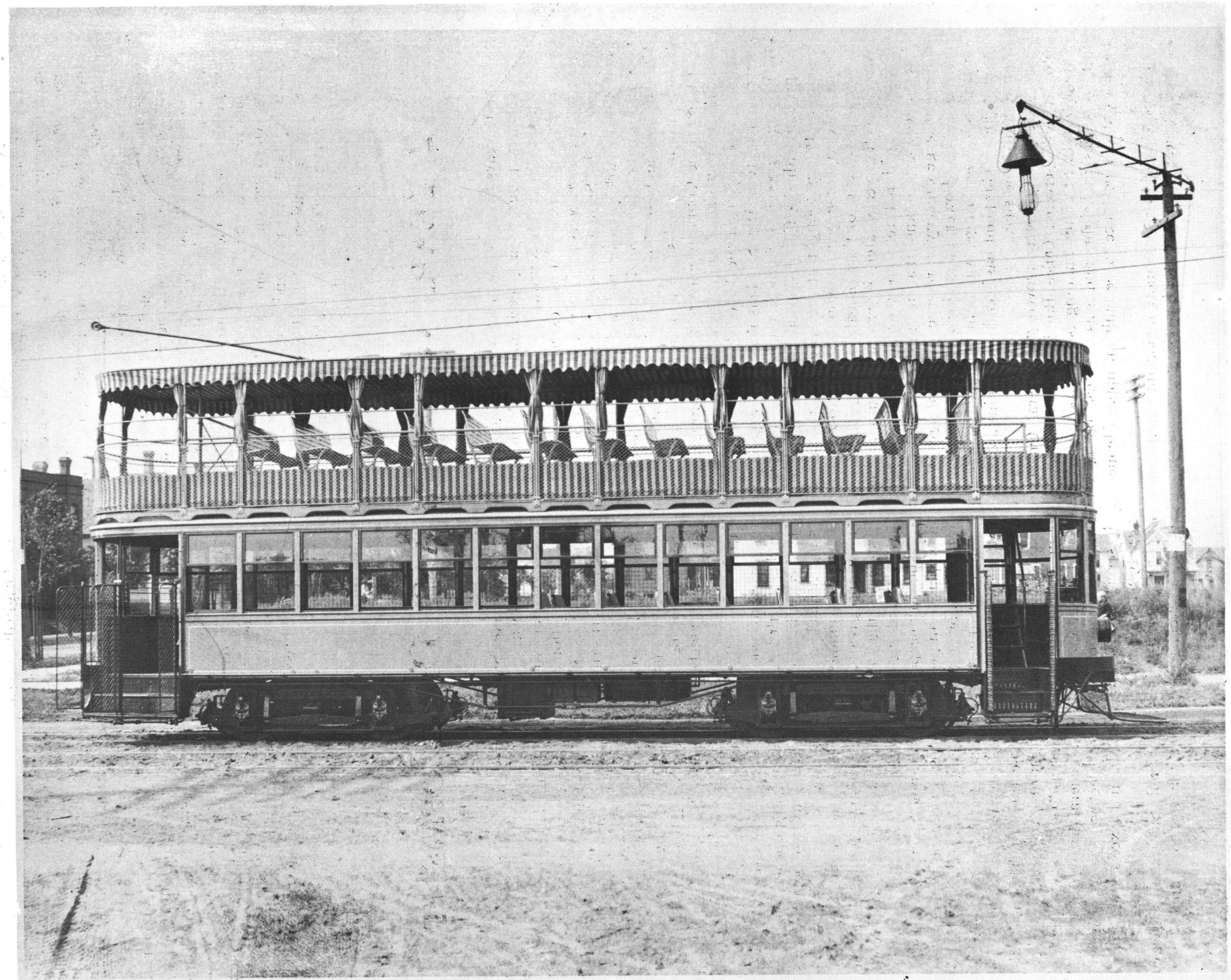
"The Excelsior line is being double tracked to West Minneapolis at present, but with the patronage which we feel sure will come this season one of our first undertakings next spring will be the double tracking of the line for the remainder of the distance."

NEW ST. PAUL BRIDGE.

Mr. Goodrich also said that the location of the new St. Paul bridge for the accommodation of the fourth interurban had been practically decided upon by the government officials. This is the bridge connecting Fort Snelling with St. Paul for which the last legislature authorized the city of St. Paul to issue bonds in the sum of $150,000.

The present bridge is impractical for carrying heavy electric cars and a new one must be built before the benefits of the Fort Snelling line will be effective between the cities. Commencing on the St. Paul side the new bridge will be located about 100 feet north of the present structure and will run on an angle of about 45 degrees across the Mississippi river.

It will be built jointly by the federal government, the city of St. Paul and the Twin City Rapid Transit company. The terminus of the Fort Snelling line, pending the construction of this bridge, will be about a quarter of a mile from the present bridge.



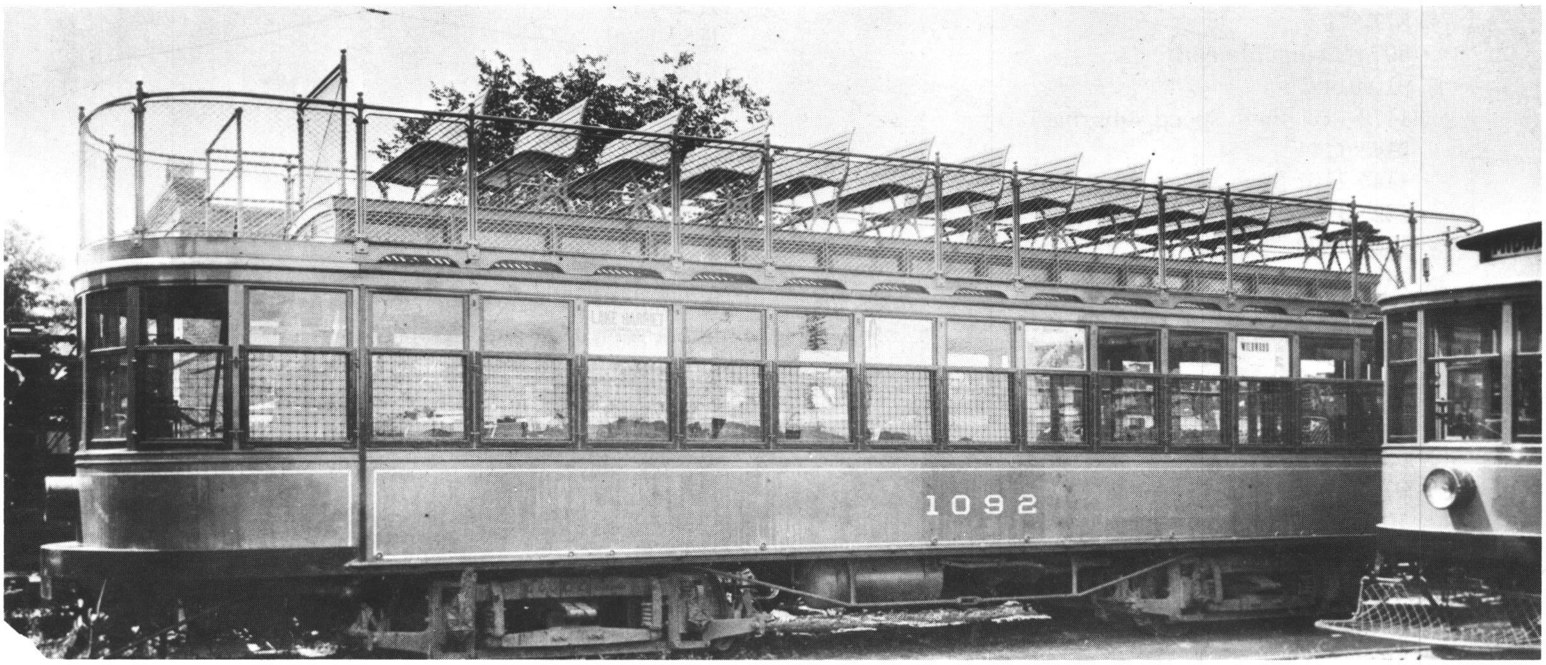
Double Deck Car Comments

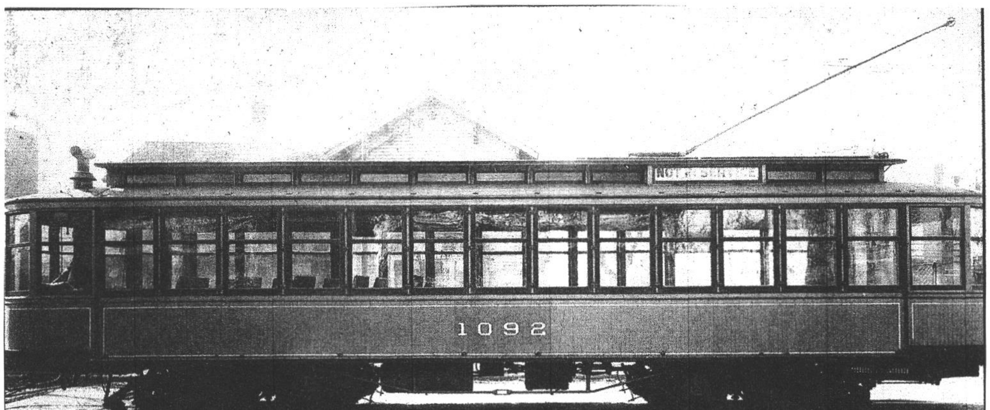
1092

This car must not have been assigned a number when built in 1904 as it was probably considered experimental. The first trial was 8-30-1904 in the yard at 31st and Nicollet. At this time the upper deck was open to the weather. Another trial was reported 9-27-1904 probably now with the upper deck canopy. This photograph appeared in Street Railway Review 10-13-1904 and Street Railway Journal 11-5-1904. No car number appears in this photograph. The 6-10-1905 newspaper article reported the company was "ready to begin a series of experiments with the car designed for the Lake Minnetonka line as well as local service." An order for twenty cars was going thru the shops during May and June 1905 so the number 1092 must have been assigned at this time. (1091 and 1094 were completed May 8th and 1093 May 6th.) The series of experiments must have resulted in the upper canopy being removed and the trolley base relocated to a stand over the rear platform roof. The Brill 04 trucks with GE 57 motors were retained. Later 1092 was photographed after its double deck days were over and in regular service. The body side-post caps on the roof where the upper deck had been attached can be seen; the car now has Baldwin #1 trucks and GE70 motors.

1160

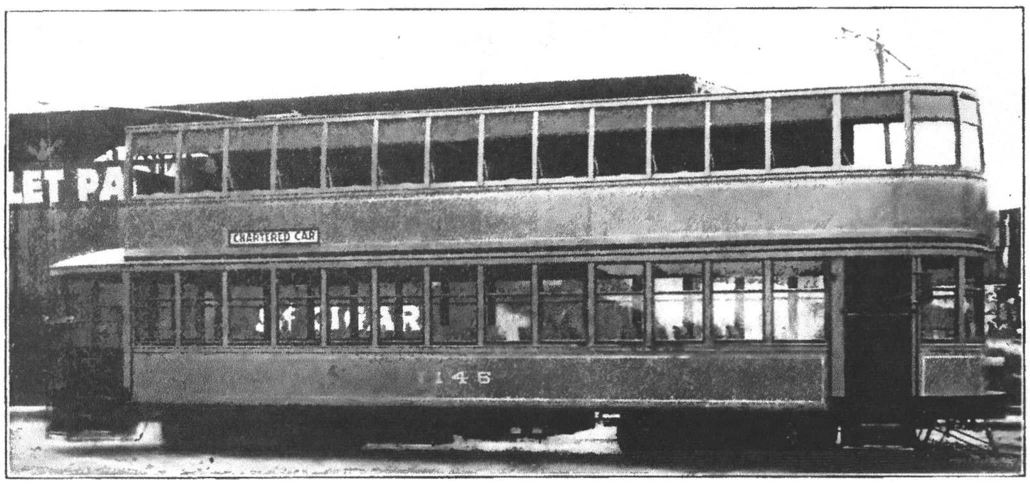
With regard to using the upper deck framework from 1092, the roof side-sill plates on 1160 are similar but the platform sill-plates are different. They match the side sill design. On 1160 the carbody between the bulkheads was 7" longer and 5 ¾" wider; platforms were longer by 6 ¾ " each. So modifications would have been necessary or new construction required.





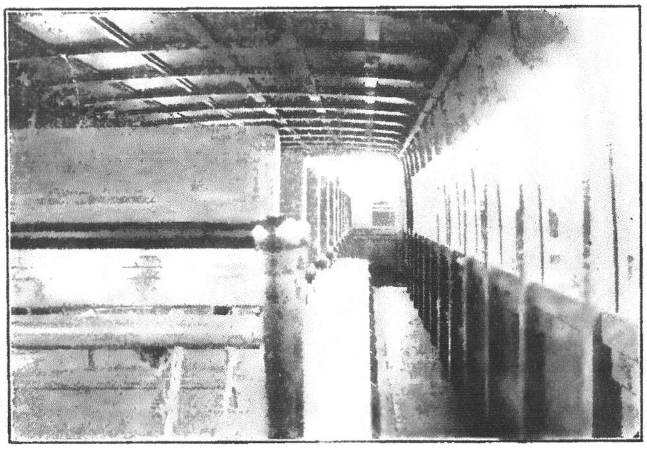
NEW DOUBLE-DECK CAR OF THE TWIN CITY RAPID TRANSIT COMPANY

The Street Railway Journal of Nov. 5, 1904, contained a description of a type of double-deck car built at that time by the Twin City Rapid Transit Company for service on the lines between St. Paul and Minneapolis. The upper deck of this car was so constructed that it could be put on or removed from the standard car in use in Minneapolis and St. Paul with very little difficulty, and consisted of a framework of one-inch gas pipe bolted to 2½-in. x 5-in. sills, which rested on special fittings built permanently in the roof. The top was covered with awning material and the space between the posts was provided with curtains. This type of double-deck car, however, was found unsatisfactory, due largely to the fact that it did not offer sufficient protection from the weather, and the one that was constructed was not put into regular service.

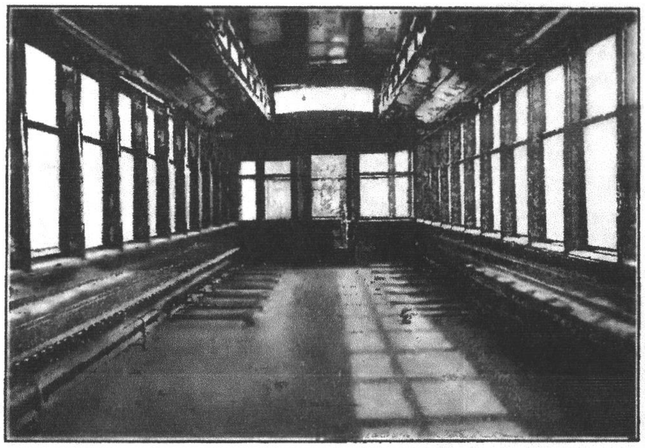


ONE OF THE NEW DOUBLE-DECK CARS BUILT BY THE TWIN CITY RAPID TRANSIT COMPANY

However, the company is now constructing thirty double-deck cars of the type shown in the accompanying illustrations for service on the interurban line to Lake Minnetonka, on which during the summer months the traffic is extremely heavy. The cars are being built in the shops of the company in Minneapolis under the immediate supervision of W. J. Smith, master mechanic of the system, to whom this paper is indebted for the details. As with the previous car of this type, the upper deck is so constructed that it can be removed from the lower portion of the car during the winter when its use is not required, but it is built in a much more substantial manner, its construction being similar to that usually employed in the ordinary closed car. The sides and ends are sheathed in the usual manner up to a rail corresponding with the arm rest. The side posts contain curtain grooves and pantasote curtains fitting close up to the posts and provided with frequent stiffening rods effectually closing the openings against the entrance of water during a rain storm. The front windows, however, are provided with sash fitted with glass after the manner followed in the construction of the lower portion of the car body. Composite wood and steel carlines extend overhead from opposite side posts and form a support for purlines over which the canvas top is stretched. The upper compartment is provided with slat seats running crosswise of the car and resting directly on the roof of the lower portion, which is provided with a grass carpet. The seats, however, do not extend the full width of the car, but space is reserved on one side for an aisle as shown in one of the illustrations. The second deck is well lighted by lamps placed over each window opening just above the curtain, and other lamps supported by carlines in the front and rear. The upper deck seats 65 people.



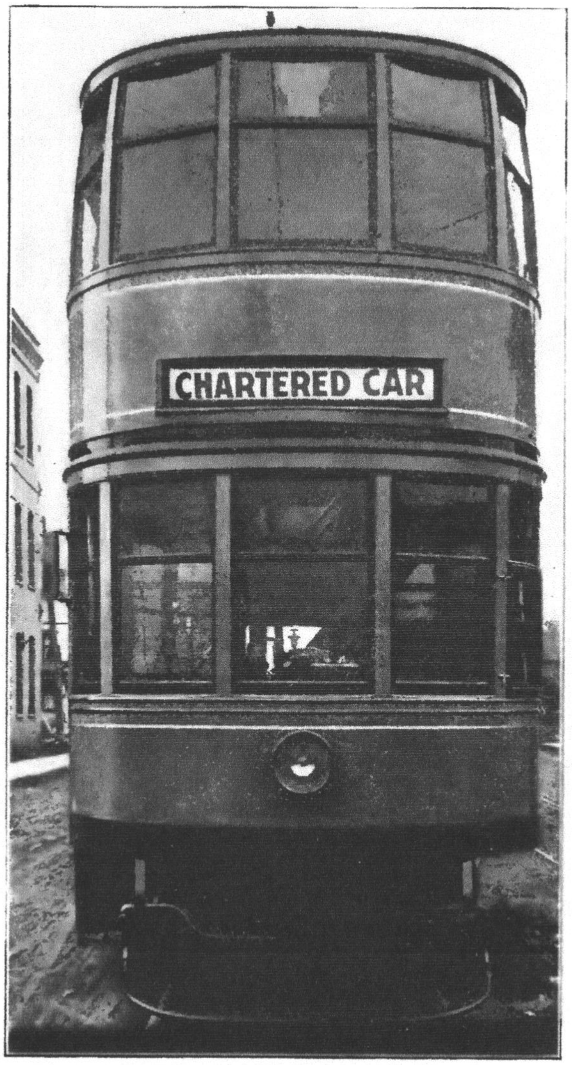
SIDE AISLE OF UPPER DECK SEEN FROM THE FRONT OF THE CAR



INTERIOR OF DOUBLE-DECK CAR, SHOWING THE SIDE GIRDERS OF THE STEEL BOTTOM FRAMING

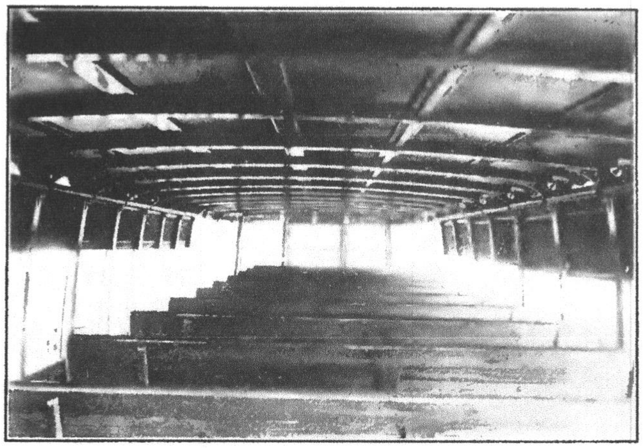
One of the illustrations shows the stairway over the front vestibule, by means of which access is gained to the upper portion of the car. No stairway is provided in the rear, the idea being that the motorman will observe the people passing to the upper deck, while the conductor will take care of those in the lower portion of the car. Just in front of the stairway and immediately over the motorman's cab is a comparatively large space which will be utilized for the storage of baggage and lunch baskets of picnic parties. The upper deck adds about 5000 lbs. to the weight of the car, while the height of the car with the second story added is 16 ft. 8 ins. As the trolley is placed 20 ft. above the track there is a clearance of 3 ft. 4 ins. between the trolley and the roof of the car. The ordinary type of trolley pole will be used.

The cars upon which the upper decks are being fitted are built in the shops of the company and are constructed on steel floor framings, of which a short description was given in the STREET RAILWAY JOURNAL of July 1, 1905. Some of these steel bottom framings are shown in an accompanying view of construction work in the shops. The sides of the framing are high enough to serve as girders and eliminate the necessity of additional trusses for supporting the car body. These girders serve as the inside finish of the car, and the angle-bar riveted to the top is utilized both as a foot-rest and as a means of protecting the heater pipes, which are carried on light malleable iron castings bolted to the girder. In the construction of the car a sufficient space is left between the girder and the outside sheathing to form pockets into which the side sash drop to within a few inches of the bottom of the framing. This construction is well shown in one of the accompanying illustrations.

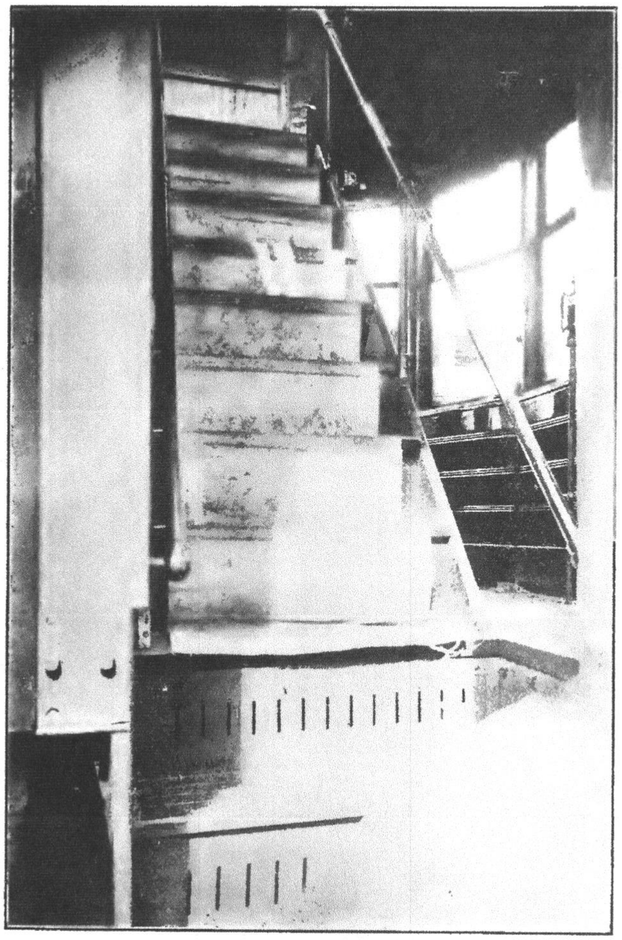


HEAD-ON VIEW OF THE TWIN CITY RAPID TRANSIT COMPANY'S DOUBLE-DECK CAR

The steel bottoms upon which the present cars are being constructed differ slightly from those described in the STREET RAILWAY JOURNAL, and upon which thirty-three cars were built during the year 1905. The later framings are built for a car 6 ins. wider and 12 ins. longer. The additional width of the new cars is placed in the aisle and in the door openings, and the additional length is added to the platforms, where it is utilized in widening the entrances. These entrances, of which there are two, are 27 ins. wide, and are provided with the Minneapolis type of gate. The doorway leading into the body of the car allows for an opening of 3 ft. 9 ins. in the clear. To provide for the addition of the upper deck and the load on the roof the body framing was built somewhat heavier than otherwise. The width of the corner posts was increased and the roof carlines were reinforced, so that with the full load in the upper deck the deflection by actual test does not exceed 1-16 of an inch. At every post the wood carlines are reinforced by steel carlines measuring 3/4 in. x 2½ ins. In the forward portion of the car, where the presence of the sign necessitates an extra width of upper-deck window, the steel carlines measure 1 in. x 2½ ins.

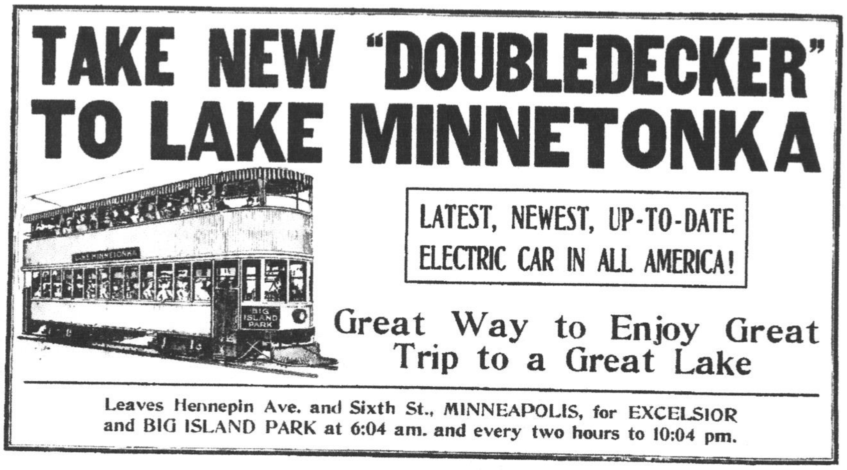


VIEW FROM THE REAR OF THE UPPER DECK, SHOWING SIDE CURTAINS AND FRONT SASH



STAIRWAY ON THE FRONT PLATFORM LEADING TO THE UPPER DECK

In the construction of the car, precaution has been taken to guard against the arcing or burning of electrical apparatus underneath the body setting fire to the car. The whole surface of the under side is lined with ⅛-in. transite board. While this adds about 350 lbs. to the weight of the car, it removes the possibility of the floor and the car catching fire. The motor and resistance wires are run in asbestos tubes cleated to the under side of the car. The cast steel bolster used permits the wires to run through an opening in it immediately over the king bolt. This avoids the necessity of dropping the cables down under the bolster as is frequently done. The king bolt extends only through the lower portion of the bolster, and is held in place by a pin driven through it. Baldwin trucks are employed, and these are fitted with adjustable side bearings so that the trucks can be changed without the necessity of shimming up or lowering the side bearings. This adjustment is made by employing rollers of different sizes as is frequently found in steam road car construction. It is the intention to change trucks when a car is brought into the shop with disabled motors, and thereby shorten the time the car body is required to remain in the shop. Two extra trucks equipped with motors will be provided for every twenty-five cars. The trucks are fitted with rolled steel wheels mounted on an axle 6 ins. in diameter at the gear and wheel seat. The tires of the wheels are 4 ins. wide and are provided with a 2¼-in. tread.


LAKE MINNETONKA
BIG ISLAND PARK

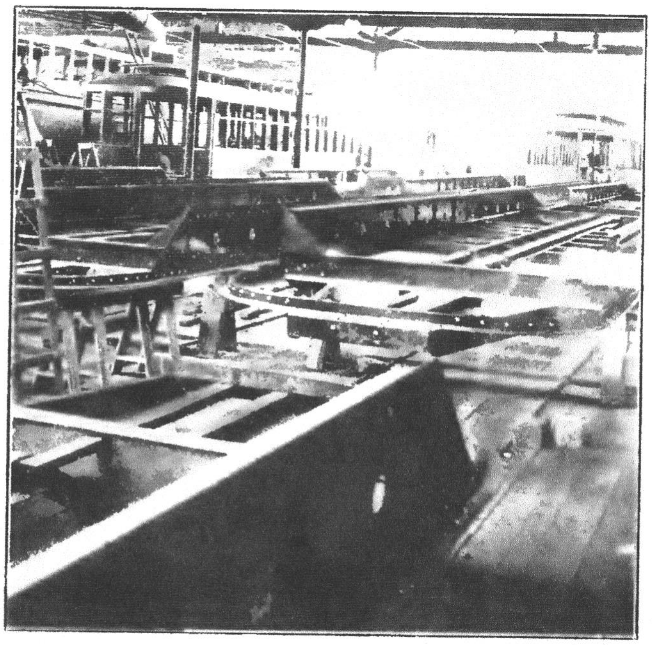
TAKE NEW "DOUBLEDECKER" TO LAKE MINNETONKA

LATEST, NEWEST, UP-TO-DATE ELECTRIC CAR IN ALL AMERICA!

Great Way to Enjoy Great Trip to a Great Lake

Leaves Hennepin Ave. and Sixth St., MINNEAPOLIS, for EXCELSIOR and BIG ISLAND PARK at 6:04 am. and every two hours to 10:04 pm.

A SPECIMEN OF THE ADVERTISING POSTER USED TO CALL ATTENTION TO THE DOUBLE-DECK CARS



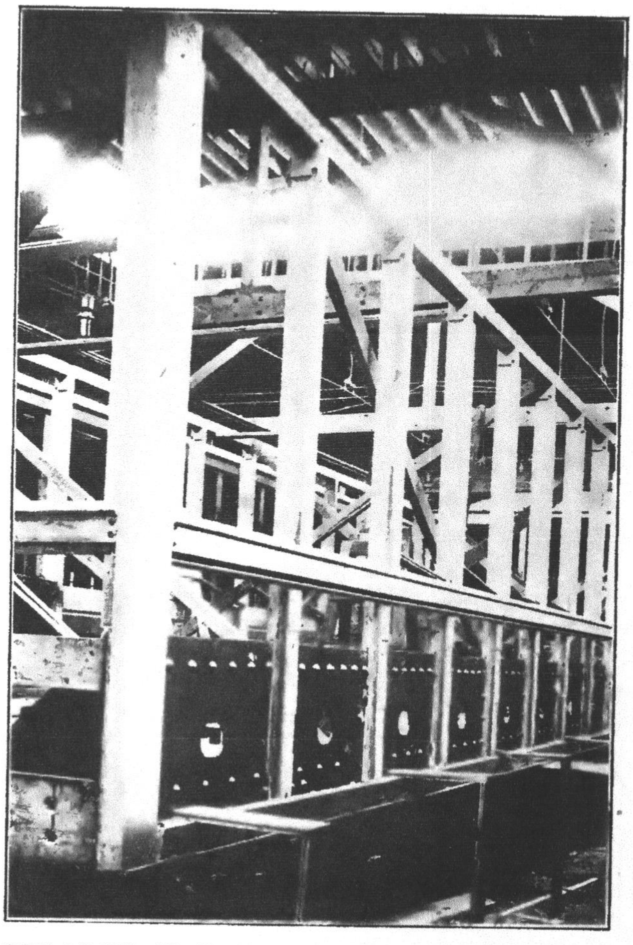
STEEL BOTTOMS OF DOUBLE-DECK CARS IN THE SHOP

◆◆◆

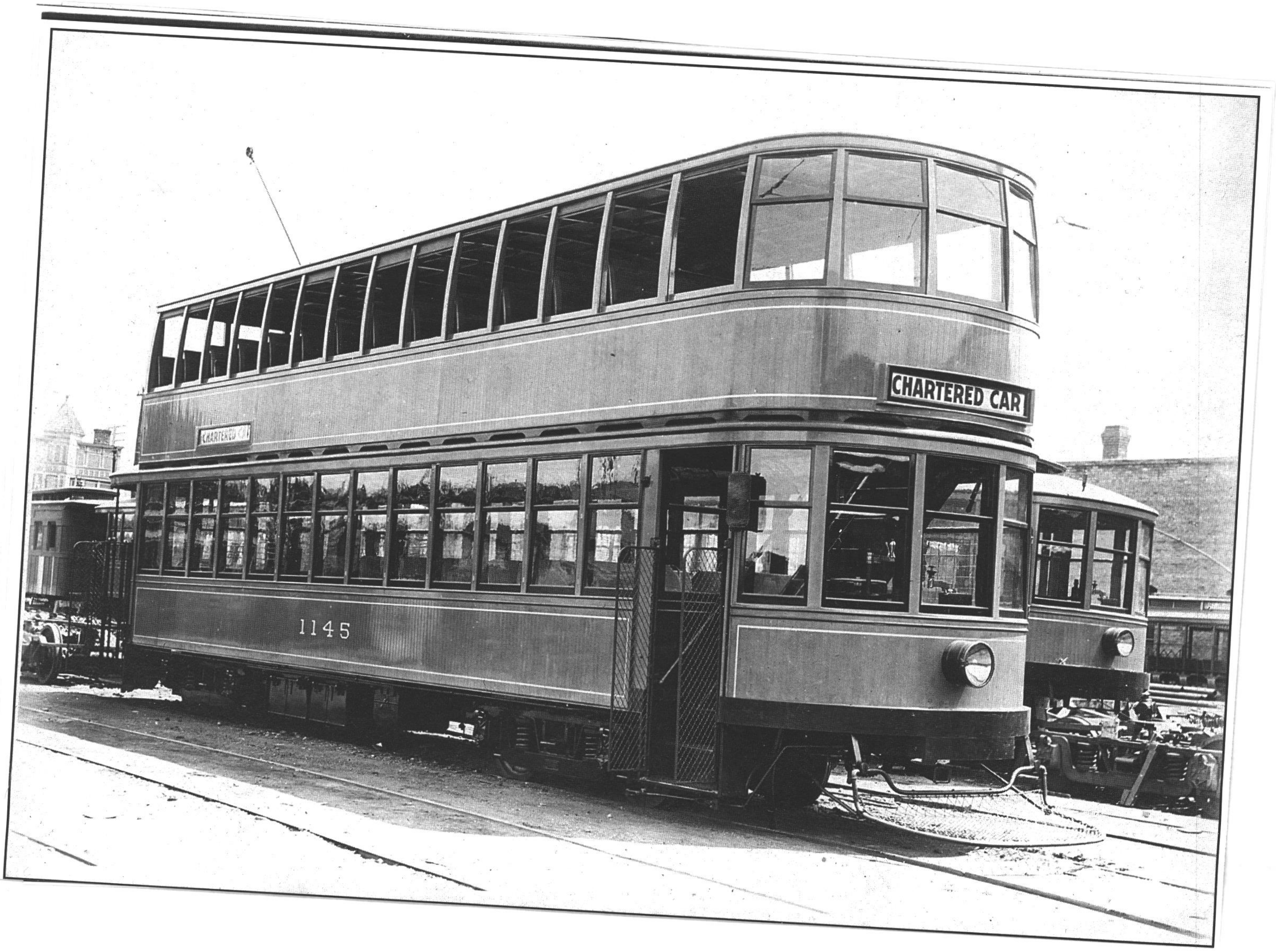
IMPORTANT CHANGES IN BALTIMORE

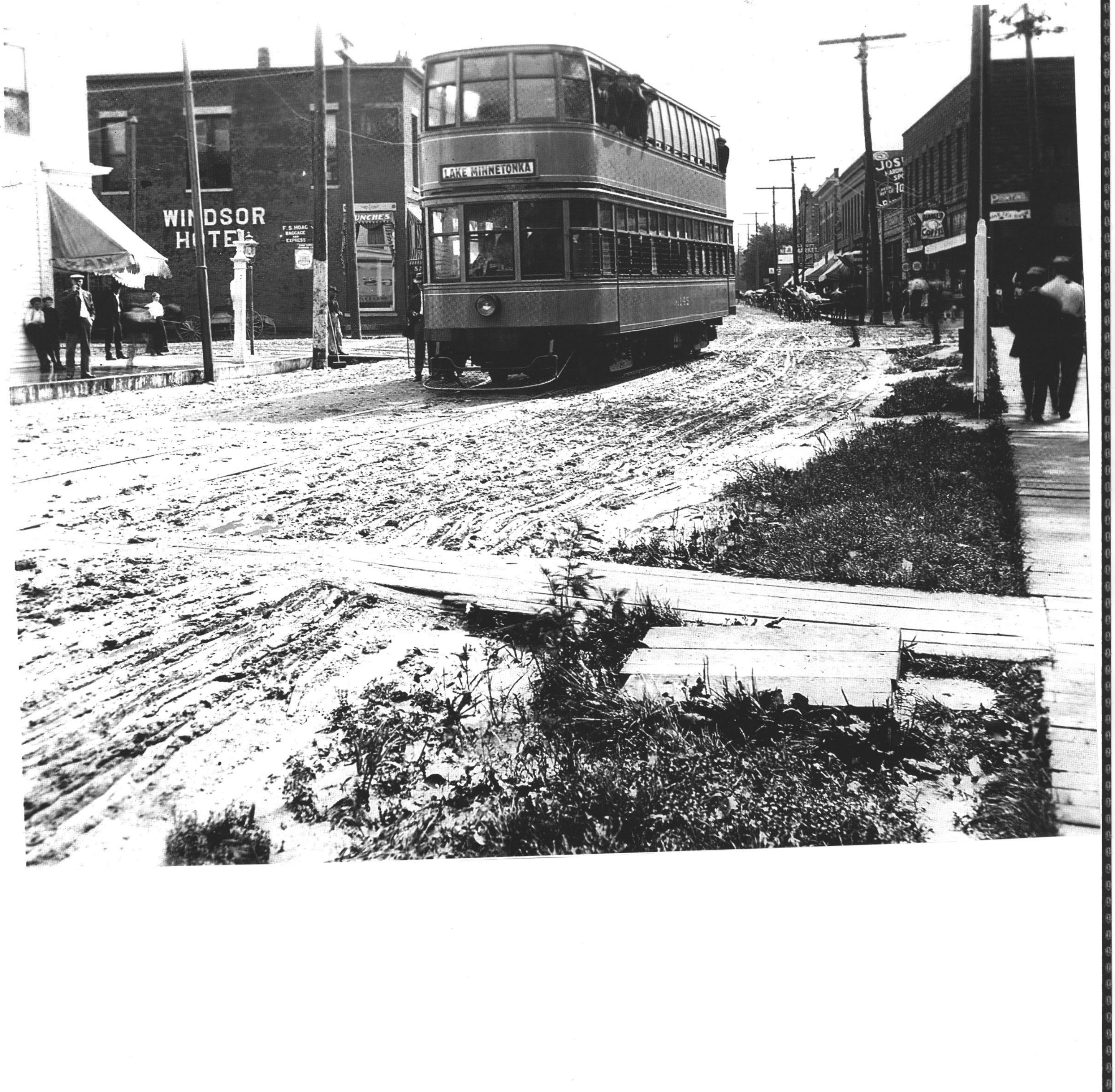
L. B. Stillwell has just taken a contract to reorganize and complete the power station of the United Railways & Electric Company, of Baltimore. The work will be along the same lines as those undertaken by Mr. Stillwell several years ago for the Niagara Falls power plant, viz: the completion of the construction of the power plant and the organization and training of an operating force for its proper operation. This is a specialty of Mr. Stillwell, as he considers the organization and training of a competent operating force as a very essential part of the work in connection with the construction of power plants. In Baltimore he has undertaken to accomplish this in a year.

On Oct. 1 Horatio A. Foster, the well-known consulting and mechanical engineer and author, of Philadelphia, became associated with Mr. Stillwell and moved his office to Baltimore to become resident engineer in charge of this work, with offices in the Continental Building.

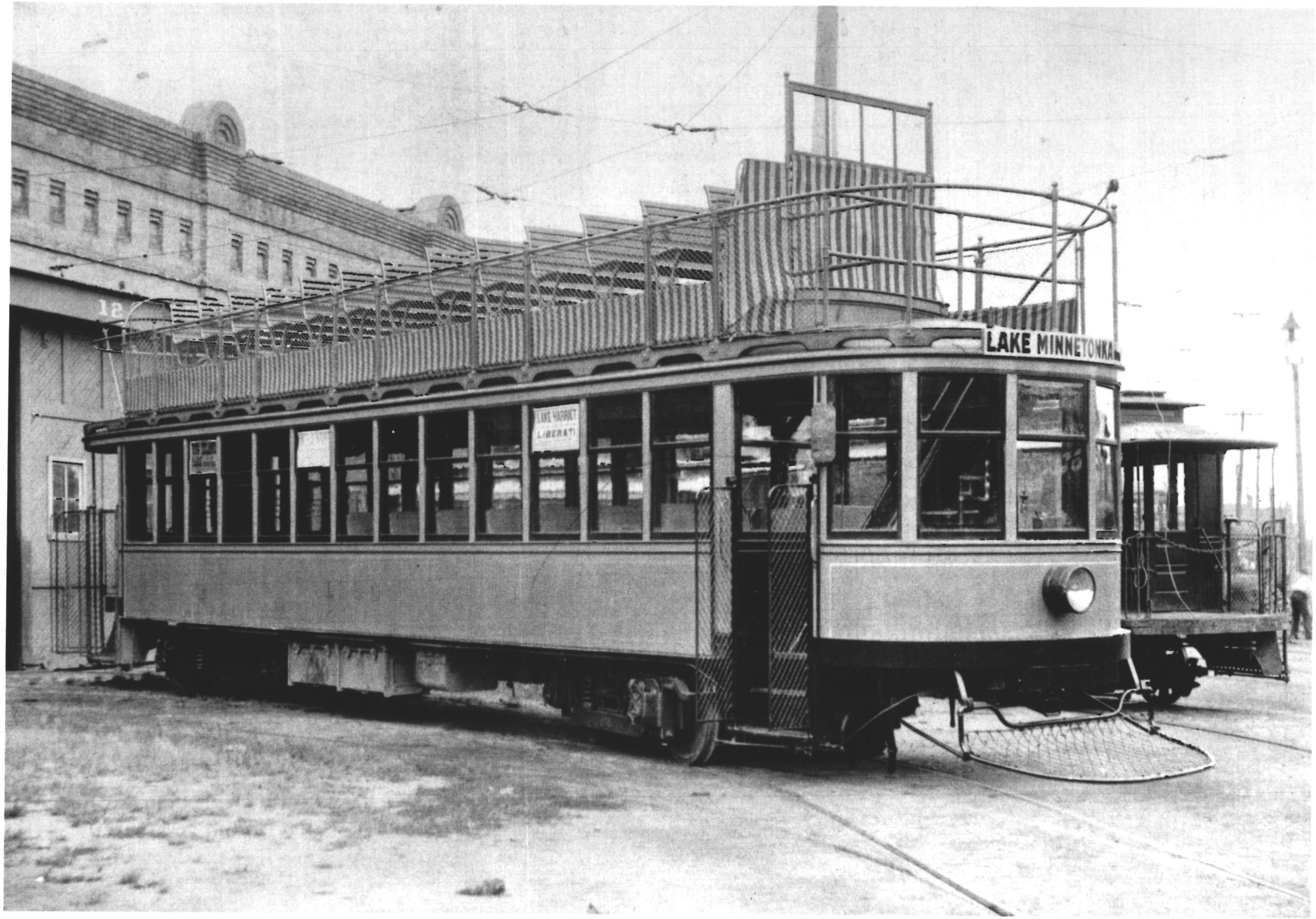


SIDE OF CAR, SHOWING HOW POSTS ARE FITTED OVER SIDE GIRDER AND THE HAND HOLES IN GIRDER FOR CLEANING OUT THE WINDOW POCKETS


CHARTERED CAR
CHARTERED CAR
1145


LAKE MINNETONKA
WINDSOR
HOTE
F. S. HOAG
BAGGAGE
AND
EXPRESS
LUNCHES
JOS
COFFEE
PRINTING

PV119ED AVERY


12
LAKE MINNETONKA
LAKE HARRIET
LIBERATI

ERJ 10-12-1912

LATER DEVELOPMENTS

Few attempts have been made during the comparatively recent years to make use of the double-deck principle. One of the most noteworthy of these was a car built by the Twin City Rapid Company at Minneapolis in 1904. It was constructed from one of the company's standard 45-ft. cars, by reinforcing the roof, installing cross seats upon the monitor deck, and covering the whole with a light canopy roof. A straight stairway at right angles to the center line of the car was installed at the front end only, the Twin City cars being arranged almost without exception for single-end operation. The stairway led up without a break from the entrance steps for the front platform. The upper deck seats were transverse and were elevated about 15 in. from a walkway on each side of the deck. The seats and canopy were removable so that the car could be transformed into a single-decker during the winter months. With the upper deck equipment in place the car was reported to weigh 52,000 lb., seating ninety-nine and accommodating sixty-five standing. It was only used as a chartered car and for similar services and was for this work apparently very satisfactory, for in the latter part of 1906 the company built another double-deck car, similar in general design to the first, but with a partly inclosed upper deck.

The latter was placed upon a 20-mile run to Lake Minnetonka from Minneapolis and was advertised extensively by the company. It was found that people were timid about riding on the upper deck so near to the trolley wire, and it will be seen from the accompanying illustrations that the two decks were completely separate, as access and egress to the upper one was only to be had by the front stairway, which ran direct to the ground. One great objection was apparently the exposure of the upper deck passengers to occasional showers. When rain came up everyone wanted to get into the shelter of the lower deck.

After about three weeks of this service both cars were taken off the road and reconverted to single-deck cars, the management deciding that the double-deck principle was not suitable to conditions existing in the Twin Cities. There was, however, about this time, a double-deck car built for Jamestown, N. Y., which is reported to be still used for occasional special service.

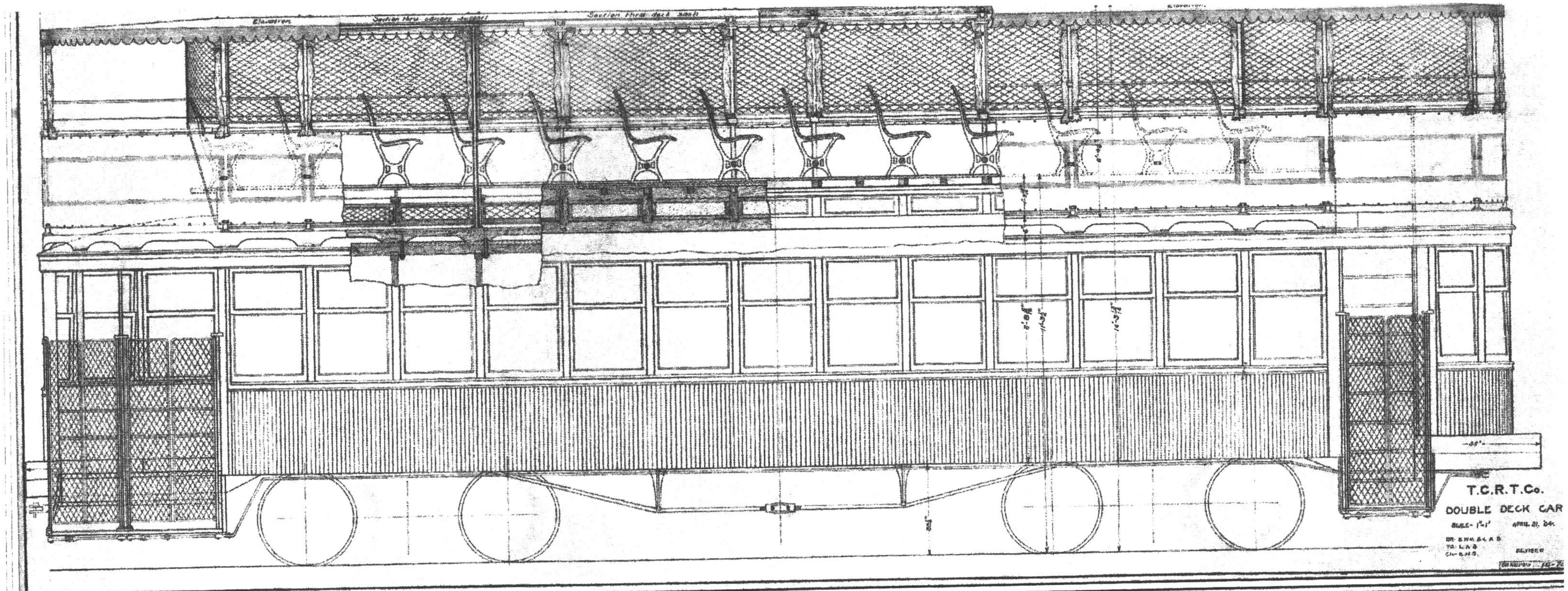
Double Deck Cars

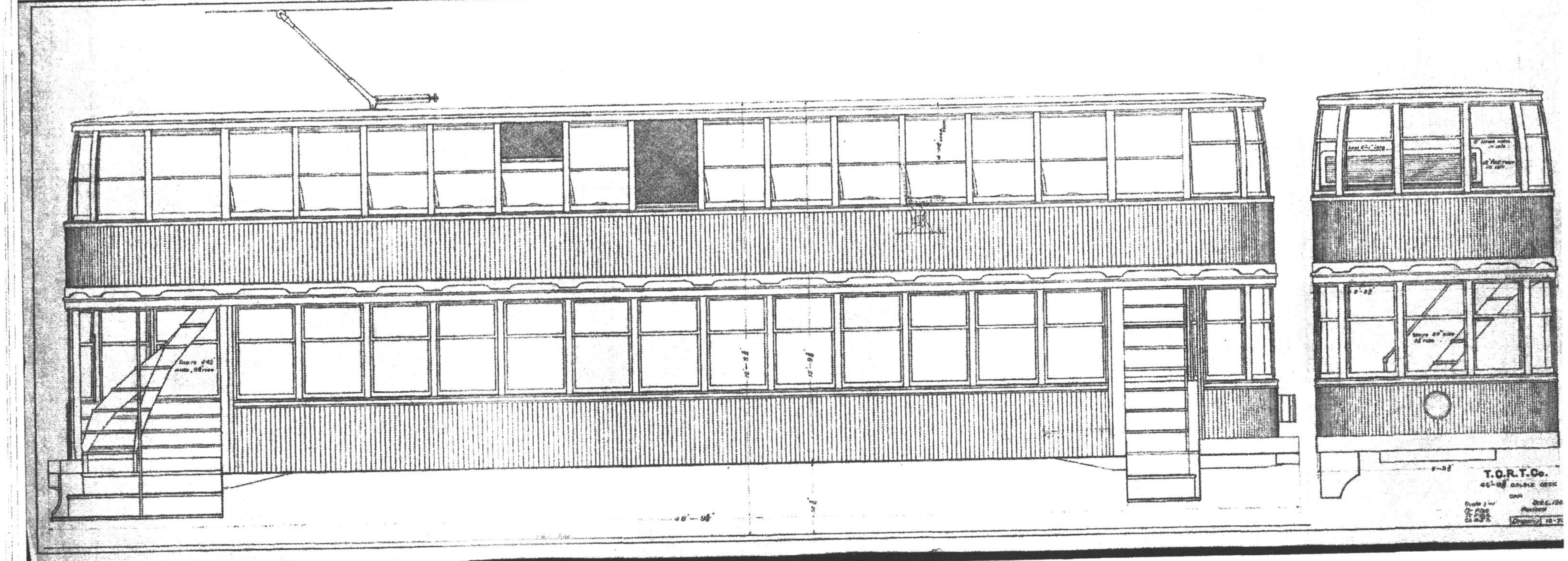
"Happening around Deephaven"

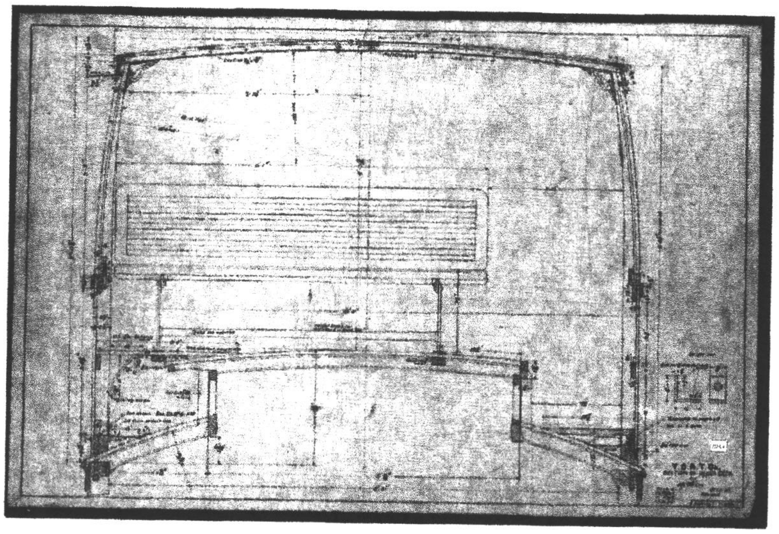
6-1906

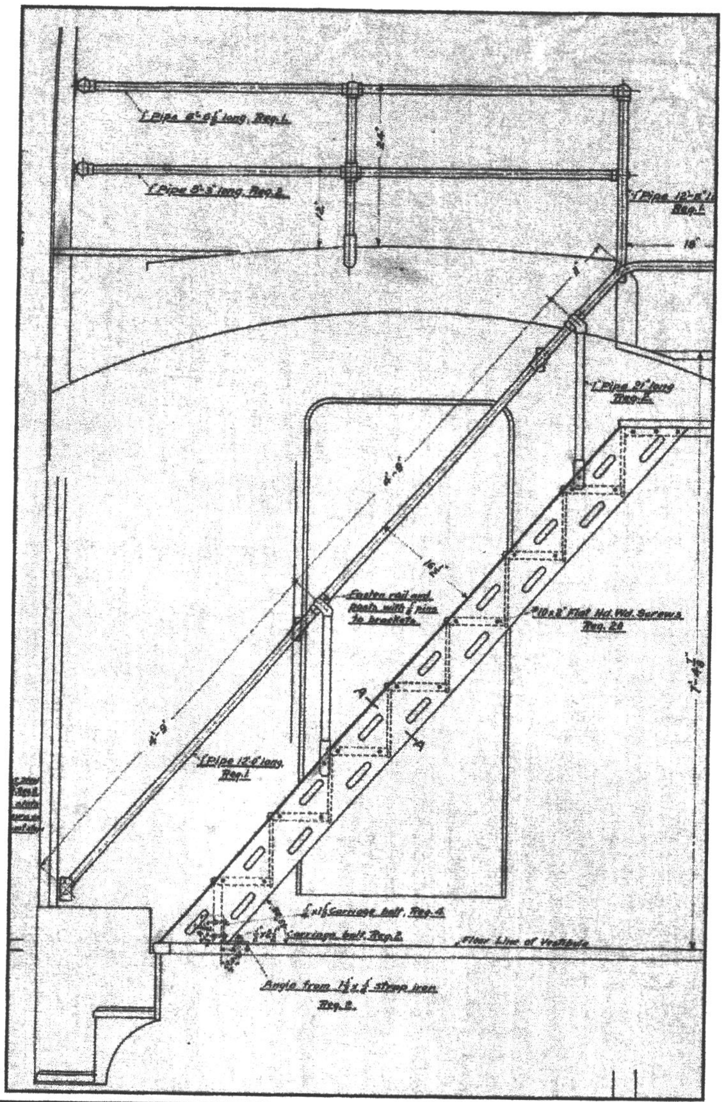
On the streetcar line to Excelsior the company had added topdecks to three streetcars but decided within three years that the double deckers were cumbersome and unsafe at the high speeds reached on the run to Lake Minnetonka.

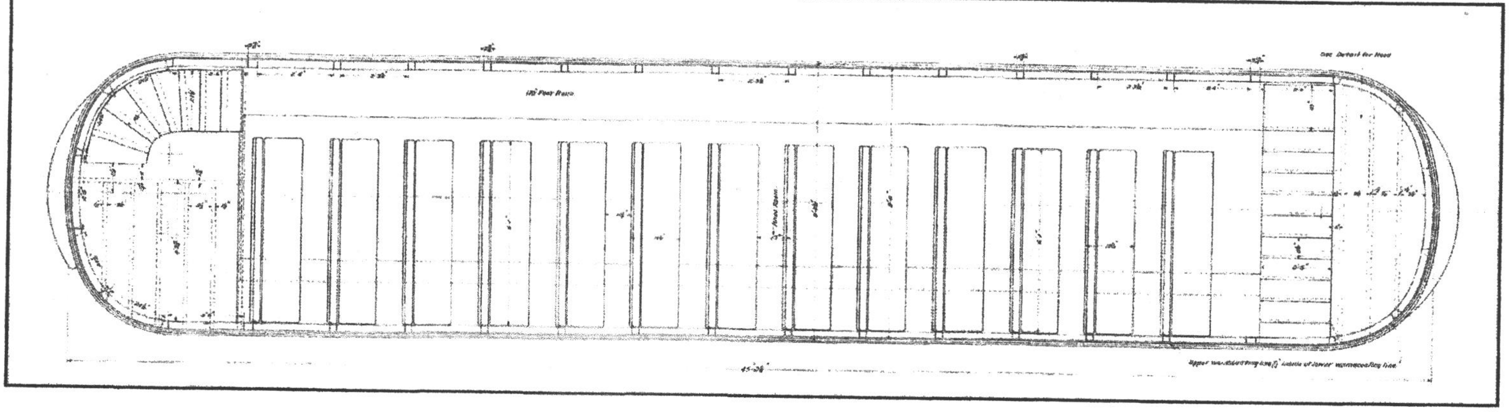
AVERY® M
PV119■D

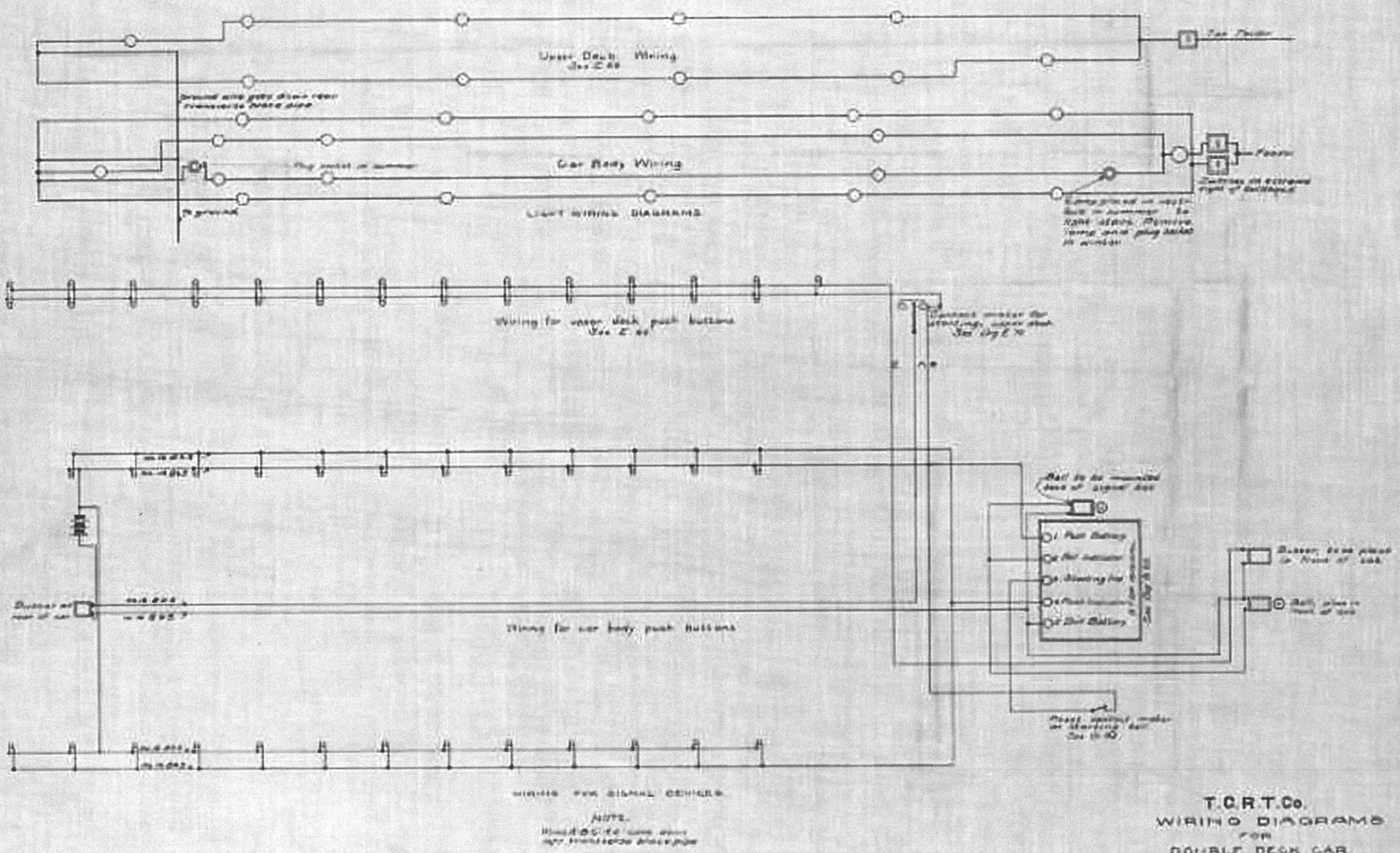

Elevation
Section thru deck sash
T.C.R.T.Co.
DOUBLE DECK CAR
SCALE- 1"=1'
APRIL 21. 04.
REVISED


48'-9⅜"
T.C.R.T.Co.
46'-9⅜" DOUBLE DECK
CAR
Scale ½"=1'
Oct. 6. 190
Revised
Drawing 10-7




1" Pipe 8'-6½" long. Req. 1.
1" Pipe 8'-3" long. Req. 2.
1" Pipe 12'-6" long. Req. 1.
16"
1" Pipe 21" long. Req. 2.
4'-8"
16½"
Fasten rail and posts with ¼" pins to brackets.
#10 x 2" Flat Hd. Wd. Screws. Req. 28
A
A
7'-4⅞"
4'-9"
1" Pipe 12'-0" long. Req. 1
⅜" x 1½" Carriage bolt. Req. 4.
⅜" x 2½" Carriage bolt. Req. 2.
Floor Line of Vestibule
Angle from 1½" x ¼" strap iron. Req. 2.


See Detail for Hood


Upper Deck Wiring
See E 68
Fan Feeder
Ground wire goes down near transverse brace pipe
Plug socket in summer
Car Body Wiring
To ground
Feeder
Switches on extreme right of bulkhead
Lamp placed in socket in summer to light stairs. Remove lamp and plug socket in winter
LIGHT WIRING DIAGRAMS
Wiring for upper deck push buttons
See E 68
Contact maker for starting, upper deck
See Dwg E 70
Bell to be mounted back of signal box
1 Push Battery
2 Bell Indicator
3 Starting Bar
4 Push Indicator
5 Bell Battery
Buzzer, to be placed in front of cab
Bell, placed in front of cab
Buzzer at rear of car
Wiring for car body push buttons
Reset contact maker on starting bell
WIRING FOR SIGNAL DEVICES

NOTE.
[illegible]

T.C.R.T.Co.
WIRING DIAGRAMS
FOR
DOUBLE DECK CAR

CLASSIFICATION SYSTEM

AVERY®c PV119ED

PASSENGER CAR CLASSIFICATION SYSTEM

We don't know when this system was developed. There are four components, three of which give different indications as to time of the beginning, as one will readily see when reading the following pages. The four components of the complete system are:

Capital letter: apparently refers to type of carbody/underframe design.
Numeral: type of step and gate assembly.
Small letter: type of truck.
Two or three numerals: manufacturer's model number of the traction motor.

For example cars 1112-1123 were classified F-4-b-73. An explanation of the first three components is presented on the following pages. The fourth component, 73, refers to G.E. 73 motors. Aside from the one Mech. Dept. drawing to be mentioned, this fourth component does not otherwise appear in any other company documents we have seen.

Carbody/Underframe Type

A 607-626 Wood underframe, straight front and rear platforms. Refer to the complete description of these cars in the notebook covering the Early Electric Cars.

The Private Car had no classification number. Wood underframe, straight front and rear platforms. Length: front platform 4' 10 3/4", body 33'4¼", rear platform 4'9", overall 43'0". Width 8'9". Refer to the construction specifications for the Private Car.

B 737-788,797-867,900-951. Wood underframe. Length: front and rear platforms 5'0¼" each, body 33' 2 1/8", overall 43' 2 5/8". Width 8' 8 3/4".
Cars 737-788 were built with straight front and rear platforms. They were subsequently rebuilt with an 8" drop rear platform, steel reinforced (drawing dated July 1903).
Cars 797-867,900-951 were built with straight front platform and 5½" drop rear platform, steel reinforced (drawing dated July 1903).
Refer to the construction specifications for typical car 737.

C 868-899. Wood underframe, straight front platform, 5½" drop rear platform, steel reinforced (drawing dated July 1903). Length: front and rear platforms 4'11" each, body 27'9", overall 37'7". Width 8' 4 3/4". Refer to the construction specifications for typical car 878.

D 952-991. Wood underframe, straight front platform, 5½" drop rear platform, steel reinforced (drawing dated July 1903). Length: front and rear platforms 6'0" each, body 33' 2 1/8", overall 45' 2 1/8". Width 8' 8 3/4".
992-1041. Wood and steel underframe, 5½" drop front and rear platforms. A drawing dated March 1904 detailed steel reinforcing frames from each bolster to and under each platform for cars 1038-1079. Measurements are the same as for cars 952-991.
Refer to the construction specifications for typical car 986.

E 1042-1111 Wood and steel underframe; front and rear platform drop: 5½" 1042-1079; 7" 1080-1090 and 2nd 1043; 8" 1091-1111. Length: front and rear platforms 6'0" each, body 33' 2 1/8", overall 45' 2 1/8". Width 8' 8 3/4". Drawings for steel reinforcing frames from each bolster to and under each platform: March 1904 for cars 1038-1079; January 1905 for cars 1080-1090; and January 1905 for cars 1091-1111. Refer to construction specifications for typical car 1105.

F 1112-1144 Steel underframe, front and rear platforms 8" drop. Length: platforms 6' 0¼" each, body 33' 9 1/8", overall 45' 9 5/8". Width 8'8½". Refer to construction specifications for typical car 1131.

G 1145-1220 Steel underframe, front and rear platforms 8" drop. Length: platforms 6'6¼" each, body 33' 9 1/8", overall 46' 9 5/8". Width 9'2½". Refer to construction specifications for typical cars 1145 and 1211.

H 1221-1290 Steel underframe, front and rear platforms 8" drop. Length: platforms 6'6¼" each, body 33' 6 5/8", overall 46' 7 1/8". Width 9'2½". Refer to construction specifications for typical car 1279.

I 1291-1309 Steel underframe, front and rear platforms 8" drop. Length: platforms 6'6¼" each, body 33' 6 5/8", overall 46' 7 1/8". Width 9'2½". Refer to construction specifications for typical car 1279.

J 1310-1359 Steel underframe, front and rear platforms 8" drop. Length: platforms 6' 7 1/8" each, body 33' 6 5/8", overall 46'8". Width 9'2½". Refer to construction specifications for typical car 1415.

K 1360-1485 Steel underframe, front and rear platforms 8" drop. Length: platforms 6' 7 1/8" each, body 33' 6 5/8", overall 46'8". Width 9'1". Refer to construction specifications for typical car 1415.

L 2nd1482-1485; 1486-1855 Steel underframe, front and rear platforms 7" drop. Length: front platform 6'5¼", body 33' 7 3/4", rear platform 6'7", overall 46'8". Width 9'1". Refer to construction specifications for typical car 1579.

A Mechanical Dept. tracing lists the complete classification number for each car. The tracing is undated but is complete through cars 1-4 and 2004-2005. The classification numbers for the lightweight cars are:

Class M-9	2000-2001
Class N-9	2002-2003
Class O-9	2004-2005
Class P-10	1-4.

A pencil notation states that "Class P = One Man Cars".

It is my guess that 2006-2030 were Class P-11 when built in 1927-1928. When 2000-2005 were rebuilt to conform to 2006-2030 in 1928-1929 they were reclassified:

Class P-12	2004-2005
Class P-13	2000-2001
Class P-14	2002-2003.

M 2000-2001 Steel underframe, front and rear platforms 7" drop. 2000 length: front platform 6'0", body 33'4¼", rear platform 6'8", overall 46'0¼"; 2001 (2000A) length: front platform 6'8", body 33'4¼", rear platform 6'0", overall 46'0¼". Width (both) 9'0".

The data sheet on 2000-2001 as rebuilt to Class P-13 does not indicate the platform lengths; just the overall length 46'0¼" and width 9'0".

N 2002-2003 Steel underframe, front and rear platforms 7½" drop. Length overall 46'0". Width 9'0". Same measurements as rebuilt to Class P-14.

O 2004-2005 Steel underframe, front and rear platforms 8" drop. Length overall 45'6". Width 9'0". Same measurements as rebuilt to Class P-12.

P 1-4 Steel underframe, straight platforms. Length overall 35'10¼". Width 9'0".

P 2006-2030 Duralumin underframe, front and rear platforms 8½" drop. Length overall 45'6". Width 9'0".

Step and Gate Assembly Type

1 Two pair of gates, opening 35" each pair. (1291-1309 built 1908)

2 Three pair of gates, opening 28" each pair. (1310-1379 built 1908-1909)

3 One pair of gates, opening 42". (797-816,832-867,905-941: unrebuilt cars) (607-626 also)

4 Two pair of gates, opening 33" each pair. (992-1144 built 1904-1905)

5 Two pair of gates, opening 32" each pair. (950-951 built 1903) (737-788,817-831,868-899, 900-904,942-949 rebuilt 1904-1905)

6 Two pair of gates, opening 36" each pair. (Class G 1145-1220 built 1906);
Two pair of gates, opening 35" each pair. (Class H 1221-1290 built 1907).

7 Two pair of gates, opening 33" each pair; divided brass handrails and castings. (952-991 built 1903)

8 Three pair of gates, opening 28" each pair. (1380-1855 built 1910-1917) (1254,1266-1328 rebuilt 1928)

9 thru 14 Pertain to steps with folding doors; no records have been found which explain the differences.

Truck Type

The following list was made based on the Mech. Dept. tracing previously mentioned and the equipment data sheets. We have found that in several instances the classification letter on the data sheets was not changed when the truck types changed which probably accounts for the duplications. We have not found explanations for the unused letters nor why the Twin City Work Car and Twin City #7 Work Car trucks were not included (perhaps **i** and **j** ?).

a Baldwin #1
b Baldwin #2
c Twin City #6 May have been Baldwin #3 originally.
d Baldwin #4
f Baldwin #5 and Twin City #5
g Twin City

Speculation
e Baldwin #5
f Twin City #5

h	All Brill trucks
k	Twin City #8
l	Twin City #10
m	Bemis trucks on Open Cars 540-547,549-551. (*) Subsequently Twin City #11 and Twin City #12
o	Twin City #9
r	Twin City #11
s	Twin City #12
tr	Bemis trucks on Open Cars 707-731. (*)

Speculation

h Brill (Old)
i Brill 01-02-03
j Brill 04

(*) Data sheets had been issued on these cars which included the classification.
540-547,549-551 = O-x-m
707-731 = O-x-tr
Speculation: O is for Open car and x is for one pair of gates with folding step.

Data Sheets

M-9-l	2000-01	TC#11
P-14-m	2002-03	TC#12

Equipment Data Sheet Descriptions

A set of equipment data sheets dating to circa 1916 had, in addition to the Classification, a further descriptive class.

Urban Car	737-788,797-1111,1124-1144,1189-1254,1266-1290. (Cars with G.E. 67 and 70 motors; "slow" cars.
Suburban Car	1112-1123,1145-1163,1255-1265. (Cars with G.E. 73 motors.)
Interurban Car	1169-1188,1291-1481. (Cars with G.E. 213 and 216 motors; "fast" cars. Used mostly on the four inter-city lines.)
Standard Passenger Car	1482-1854. (Cars with G.E. 216,203,200 motors; "fast" cars. Sliding motorman's cab door.)

1164-1168 "SUBURBAN CARS" BUT HAD B&W #1 TRUCKS AND GE70 MOTORS. CLASS. LIGHTS ON THE DATA SHEET BUT REGULAR FENDERS.

When the rebuilding program to front exit doors began all cars except the Suburban Cars were reclassified as Standard Passenger Cars.

Classification System 1930's-1940's

Recorded from the revised equipment data sheets,we have not been able to determine its basis.

A	1-4,2000-2030.
F	813 double-end
G	847,875-876,896-898 double-end; 900-951,953.
H	961-974.
I	975-1046.
J	1047-1107,1124-1128;1129 double-end;1131,1136,1164-1165.
-	1166-1185 one/two man cars.
K	1186-1201,1203,1205-1211,1213-1253 one/two man cars.
L	1112-1113,1115-1123,1145. Inter Campus Standard Passenger: 1146-1149.
M	1145,1150-1163.
N	1254,1266-1292 front-exit gate cars; 1293-1328 one/two man cars.
O	1329-1357 front-exit gate cars.
P	1358-1381,1383,1399-1401,1403-1407,1409-1414 front-exit gate cars.
Q	1412-1413 front-exit gate cars (duplication).
R	1400-1401,1403,1404,1407,1409,1410 front-exit gate cars (duplication). 1416,1418,1419,1421-1423,1426-1429,1431,1432,1434-1436,1438,1439,1442-1445,1447, 1452,1453,1455-1461,1463,1471,1472,1474,1476-1478,1481,1483,1514,1542,1547,1555, 1563 front-exit gate cars. 1482,1485,1487-1492 one/two man cars.
S	1484,1486,1493 front-exit gate cars. 1514,1542,1547,1555,1563 front-exit gate cars (duplication). 1415,1417,1420,1424,1425,1430,1433,1437,1440,1441,1446,1448-1451, 1454,1462,1464,1548-1554,1556-1562,1564-1644 one/two man cars.
-	1382,1384-1398,1402,1408,1465-1470,1473,1475,1479,1480,1494-1512,1515-1531 one/two man cars.
T	1532-1541,1543-1546,1645-1854 one/two man cars.

PCC CARS

PCC CARS

During 1944 TCRT's Board of Directors approved a program to purchase annually a number of lightweight, noiseless, streamlined streetcars, PCC Cars, with the objective of replacing the existing fleet of TCRT-built streetcars. An initial order was placed with the St.Louis Car Company, St.Louis, Missouri, for 40 PCC cars to be delivered from October through November 1945. In order to determine the exact specifications for the car order TCRT wanted to experiment with an actual PCC car in regular service. St.Louis Car Co. diverted one car from an order of 65 cars, 1500-1564, then under construction for Pittsburgh Railways. St.Louis Car Co. order number 1652 dated 12-18-1944 covered the one diverted car. Order number 1653 dated 1-9-1945 covered the initial 40-car order.

Pittsburgh Railways car #1547 was shipped 1-13-1945 directly to St.Paul in the Pittsburgh color scheme and carrying the Pittsburgh number. A replacement car was built for Pittsburgh carrying the same number. The car was received in St.Paul 1-17-1945 and placed in service 2-23-1945. For several months it operated with the Pittsburgh Railways color scheme and number until TCRT decided to purchase the car. It was then repainted in the TCRT color scheme and renumbered. Originally intended for number 3000 it actually came out of the paint shop as number 299. It had been decided to number the 40-car order 300-339. The car underwent considerable experimentation the results of which were embodied in the specifications for the current and subsequent car orders. Due to work stoppages caused by strikes at St.Louis Car Co. none of the cars ordered for 1945 delivery were received and for 22 months 299 was the only PCC car in the Twin Cities.

299 was 46'0" long, 8'4" wide, weighed 35,830 or 36,825 pounds, and was equipped with Clark B2 trucks, four Westinghouse 1432F motors (55 h.p. each), Westinghouse controller, and combination electric and compressed air brakes. The car seated 52 persons with the Pittsburgh seating arrangement: longitudinal seats on both sides of the car between the front and center doors, and cross seats on both sides of the rear half of the car. The car was two-man operated.

The initial order of 40 cars was completed by St.Louis Car Co. in late 1946. The cars were shipped from 11-25-1946 through 1-3-1947. They were placed in service on the "Interurban" line during December 1946 and January 1947. Cars 300-339 were 46' 5 3/8" long, 9'0" wide, and weighed 37,990 pounds. These cars were all-electrically operated, with extended dynamic braking, drum brakes interlocked with the center doors (no treadles), back-up controls, motor cut-out switches, overhead fans and monitor for pressure ventilation, standee windows, hand-cranked windows, folding doors operated in pairs (not individually, or "blinker" doors, as on 299), 25 lb. gong and Klaxon horn. All cars had Clark B2 trucks with 25" diameter Carnegie super-resilient wheels. Cars 300-319 had four Westinghouse 1432J motors (55 h.p. each) and XMA-202 controller. Cars 320-339 had four General Electric 1220E1 motors (55 h.p. each) and KM-12N controller. All were two-man operated and seated 53 persons. Seating consisted of 21 cross seats (two persons each), six cross seats (one person each) located on the "gate side" only between front and center doors, and one transverse rear seat (five persons). The cars were subsequently converted for one-man operation by removing the conductor's seat and replacing it with a cross seat, increasing the seating capacity to 55 persons.

Satisfied with the results obtained with 299 TCRT had ordered an additional 50 PCC cars from St.Louis Car Co. in August 1945 for delivery during September and October 1946. These were covered by St.Louis Car Co. order number 1660 dated 8-7-1945. Now permanently behind schedule St.Louis Car Co. could not build these cars until 1947. They were shipped from 7-30-1947 through 10-4-1947. The 50 cars, 340-389, were placed in service during August, September and October, 1947. The cars were identical to 300-339 except they were one-man operated. Cars 340-364 were euipped by General Electric and cars 365-389 by Westinghouse. Seating capacity was 55 persons: 22 cross seats (two persons each), six cross seats (one person each), and one rear transverse seat (five persons).

The third, and last, order of PCC cars were also from St.Louis Car Co., consisting of 50 cars covered by their order number 1670 dated 10-??-1947. Numbers 390-439 were shipped from 5-20-1949 through 7-14-1949. They were placed in service during May, June and July 1949. These cars were identical to 340-389. Cars 390-414 were equipped by Westinghouse and 415-439 by General Electric. They were one-man operated and seated 55 persons.

The exterior color scheme on all PCC cars was: (1) standard yellow on the body; (2) Moss Green on roof, roof-mounted equipment, bumpers, skirts, trucks and underbody equipment, belt rail and letterboard striping; (3) striping brown on the rub rail above the skirts. Heating on all PCC cars was chiefly by rheostat heat with some auxiliary electric heating. Thermostats were set for 55 degrees.

There were rumors in late 1949 that 50 more cars were on order. However St.Louis Car Co. records do not show any additional orders from TCRT. TCRT was experiencing a substantial decrease in ridership as more families acquired automobiles and fares were increased. The St.Paul system was breaking even financially and the Minneapolis system yielding only a net profit margin of 1 and 2 percent. The financial results for the year 1949 indicated net profit margins for Minneapolis of zero % and St.Paul a negative 5%. And in November 1949 the new management was voted in by the stockholders. As has been related in a previous chapter, the new management soon embarked on a program of replacing all streetcars with buses.

With conversion from streetcar to bus operation well underway, TCRT searched for buyers for its modern PCC car fleet.

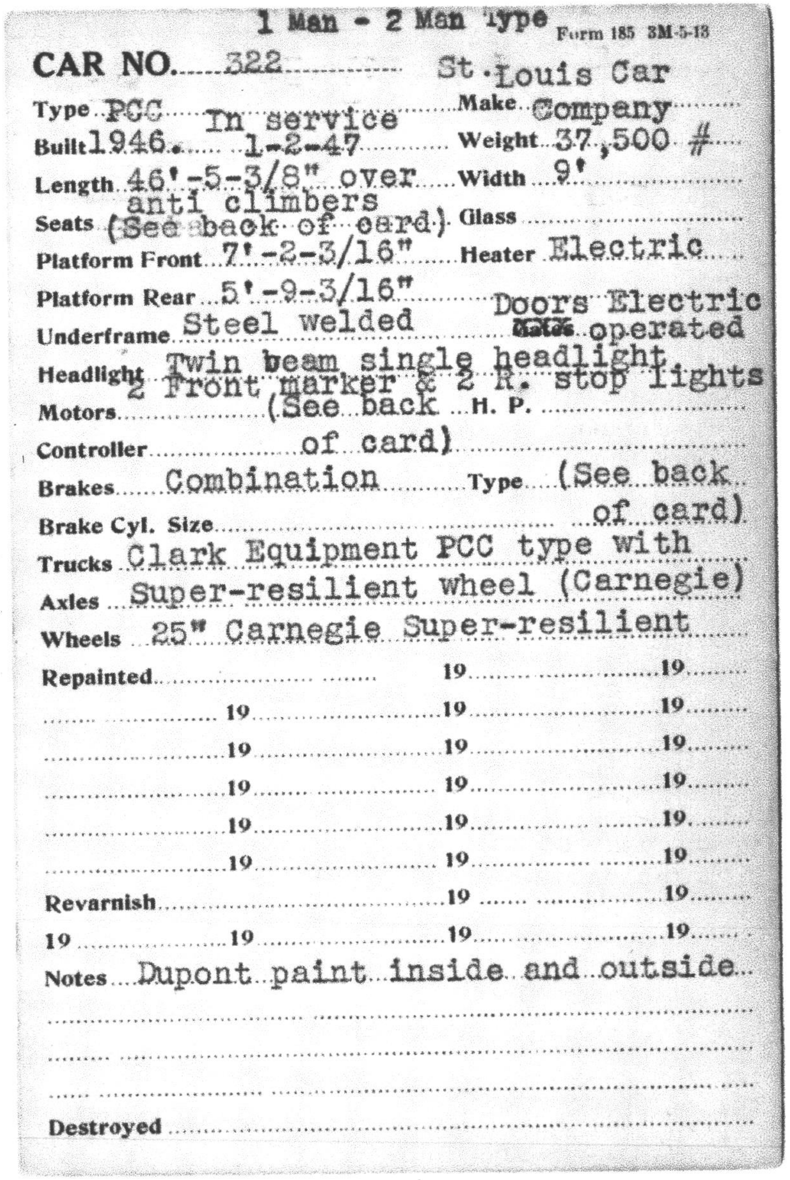
The first transaction was consummated in January 1953 when 20 cars, 340-359, were sold to the Shaker Heights Rapid Transit Co. of Cleveland, Ohio. These cars were to be completely rehabilitated and repainted in SHRT colors by TCRT. Five cars, SHRT 51-55 (TCRT 340-344) were for single unit operation while 15 cars, SHRT 56-70 (TCRT 345-359), were to be rebuilt by TCRT for train operation. All 20 cars were to receive 26" diameter wheels. All labor and materials were furnished by TCRT except the equipment for train operation which was furnished by SHRT and installed by TCRT. Work consisted of re-wiring and adding equipment for train control, almost no body work being involved. Master controllers were rebuilt, line breakers changed, coupling equipment installed, new signal system installed, back-up controls changed, front doors arranged for individual operation, Ohio Brass Co. trolley retrievers installed, destination signs made, and the cars repainted to conform to SHRT 71-95. The cars were shipped during 1953-1954.

On March 30, 1953, 30 cars were sold to the Public Service Coordinated Transport Co., Newark, New Jersey, for operation in the Newark subway. These cars were merely put in good running order by TCRT with no equipment changes or repainting. The cars were repainted and renumbered in Newark: PSCT 1-20 (TCRT 320-339); PSCT 21-25 (TCRT 360-364); and PSCT 26-30 (TCRT 415-419).

In August 1953 TCRT contracted to sell all 91 remaining PCC cars to Servicio de Transportes Electricos del Distrito Federal of Mexico City, Mexico. These cars were rehabilitated and repainted by TCRT but no equipment changes were made. Mexico City colors were light cream body and roof with green skirts and standee window panels. Mexico City numbering added a prefix 2 to the TCRT car number. Thus Mexico City numbers were 2299, 2300-2319, 2365-2389, 2390-2414, and 2420-2439. The cars were shipped during 1953 and 1954.

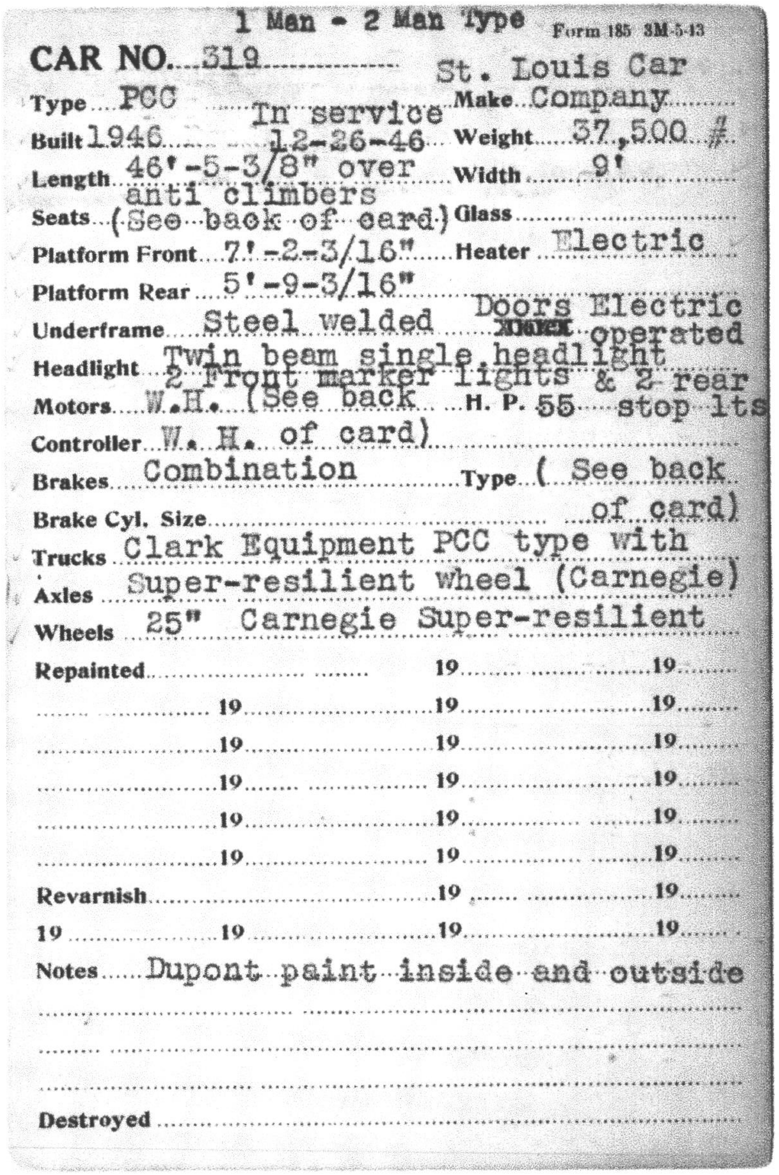
Exact acquisition and disposition dates are in the separate chapter on Building, Rebuilding and Disposition Dates. Information on acquisition costs and disposition prices are included on the following pages.

G.E.


1 Man - 2 Man Type
Form 185 3M-5-13

CAR NO. 322
Make St. Louis Car Company
Type PCC
Built 1946. In service 1-2-47
Weight 37,500 #
Length 46'-5-3/8" over anti climbers
Width 9'
Seats (See back of card)
Glass
Platform Front 7'-2-3/16"
Heater Electric
Platform Rear 5'-9-3/16"
Doors Electric ~~Gate~~ operated
Underframe Steel welded
Headlight Twin beam single headlight 2 Front marker & 2 R. stop lights
Motors (See back of card)
H. P.
Controller
Brakes Combination
Type (See back of card)
Brake Cyl. Size
Trucks Clark Equipment PCC type with
Axles Super-resilient wheel (Carnegie)
Wheels 25" Carnegie Super-resilient
Repainted 19 19
19 19 19
19 19 19
19 19 19
19 19 19
19 19 19
Revarnish 19 19
19 19 19 19
Notes Dupont paint inside and outside
Destroyed

WH


1 Man - 2 Man Type
Form 185 3M-5-13

CAR NO. 319
Make St. Louis Car Company
Type PCC
Built 1946 In service 12-26-46
Weight 37,500 #
Length 46'-5-3/8" over anti climbers
Width 9'
Seats (See back of card)
Glass
Platform Front 7'-2-3/16"
Heater Electric
Platform Rear 5'-9-3/16"
Doors Electric operated
Underframe Steel welded
Headlight Twin beam single headlight 2 Front marker lights & 2 rear stop lts
Motors W.H. (See back of card)
H. P. 55
Controller W. H.
Brakes Combination
Type (See back of card)
Brake Cyl. Size
Trucks Clark Equipment PCC type with
Axles Super-resilient wheel (Carnegie)
Wheels 25" Carnegie Super-resilient
Repainted 19 19
19 19 19
19 19 19
19 19 19
19 19 19
19 19 19
Revarnish 19 19
19 19 19 19
Notes Dupont paint inside and outside
Destroyed

2-5-1949: It was learned today from the TCRT Co.'s 1948 Annual Report that the 50 cars were ordered in October 1947. TCRT tried to cancel the order but failed. The underframes had already been laid down and as they were wider than standard PCC cars they could not be sold anywhere else. There was a penalty clause in the contract.

In May 1949 TCRT had to borrow $1,100,000 from banks to meet the obligation. This was about 77% of the approximate total cost $1,500,000. Interest rate was 3%. Repayment in 60 monthly installments.

MSR 32 cars $704,000 (390-414,433-439)
SPCR 18 cars $396,000 (415-432)

Motors:
4-55 HP-GE-1220-300/600 V with forced ventilation with brake drum on armt shaft.

Control:
1 - KM 12 N Commutating Type Controller
1 - KG 994 Control Group with
    2 - CM26 Shunting Contactors
    1 - CM42 Line Contactors
    2 - CM42 Cushioning Contactors
    1 - CM42 Motoring contactors
    2 - CM42 Braking Contactors
    1 - GM 8 Tranfer Switch
1 - DB 1805 - N Line Breaker
1 - KC 64 Combined Accelerator braking Master Controller & reverser.
1 - CMC - 600/40 - VM.G Set with double blowers delivering total of 3000 C & M air against static pressure head.
1 - EH-5 control panel complete
1-- KC-30 Back-up Controller

Brakes:
Combination: 1. Motor Generative(Dynamic)
    2. Armt. Shaft drum brake
    3. Magnetic Track brake

Beats: 1-5 Passenger rear Transverse
21-2 Passenger cross seats
6-1 Passenger cross seats
1 Operators adjustable
1 Conductor adjustable

17 KM 12 N1 CONTROLLER
CMG 129 OR GMC129 MG SET

Motors:

4 - Westinghouse Type 1432-J
    55 - H. P.

Controller:

Type XMA-2 Controller with Limit
    -7 Relay
1 - XMA Back-up Controller
1 - Type UMA-25-C Line Breaker
1 - Type UMK-534-F Contactor Assembly
1 - Set Type "M" Resistor 2-2 tube frame and 1-3 tube frame
1 - Type TT-514 Field Shunt Assembly
1 - Type XX-25-AA Motor Generator Set with 2 - 1500 cfm blowers against 2.8 static head
1 - UVA-380-E Regulator & Auxiliary panel
1- Type XD-473 Accelerator

Brakes:
Combination 1. Motor generative
    2. Armature shaft drum brake
    3. **Magnetic** track brake

Seats:
21 - 2 Passenger Cross Seats
1 - 5 Passenger Rear Transverse
6 - 1 Passenger Cross Seats
1 - Operator's adjustable seat

REBUILDING PROGRAMS

CAR REBUILDING PROGRAMS

REAR STEPS AND GATES

May 1901 S.W.O.: change steps and gate rods on 40 or 42 cars. No details provided. 40 cars would be 739-778. Including 737-738 would make 42 cars.

Cars 737-788 were built with straight front and rear platforms. Cars 797-816 were the first built with a drop rear platform, 5½". All had the #3 rear step assembly with one pair of folding gates.

Cars 950-951 built Apr-May 1903 were the first cars with the #5 rear step assembly (wider steps) with two pair of folding gates. Based on the results obtained from this new design, many of the older cars were rebuilt with drop rear platforms and #5 step and gate assemblies from 1903 thru 1908.

Drop Rear Platforms
(Steel Reinforced)

S.W.O. September 1904: one car, presumably 769, was rebuilt with an 8" drop rear platform.
S.W.O. April 1905: six Stillwater cars, 773-778, were rebuilt with an 8" drop rear platform.
S.W.O. May 1905: 45 cars, 737-768,770-772,779-788, were rebuilt with the 8" drop platform.

#5 Step and Double Gate Assemblies
Two Pair of Gates opening 32" each

S.W.O. July 1905: installed on cars 900-904 and 942-949.
Dates unknown: cars 737-788, 817-831,868-899. On 868-899 the two pair of gates opened 33" each.

DOUBLE-END OPERATION

897-899 were permanently converted for double-end operation during June 1910 for use on the "Robbinsdale Extension" and "Camden Extension" lines operated from East Side Station. 898 was later assigned to Lake St. Station for the newly opened "E. 25th St." shuttle line. Conversion consisted of adding another trolley base with pole, controller, air brake valve, and headlight. ~~The fixed seats remained~~; gates and doors were left as is on the "gate side" only.
All longitudinal seats

890 was temporarily converted for double-end operation 1911 for use as a shuttle car on the "Oak St." line because sewer and water construction had cut the line into two segments.

813 and 896 were converted for double-end operation in August and March 1912 respectively (in the same manner as 897-899) for use on the "Fort Snelling Extension" line.

992-993 were temporarily converted for double-end operation in October 1912 for use on the newly-opened "E. 25th St." shuttle line in Minneapolis. 993 was later transferred to East Side Station for use on the "Robbinsdale Extension" line. Both 992 and 993 were converted back to single-end operation during December 1914.

893 was temporarily converted for double-end operation in 1913 for use on the "St.Louis Park" line providing Calhoun Beach shuttle service. It was also used on the "South Stillwater" line during State Fair Week 1913.

894 was temporarily converted for double-end operation in 1914 as a spare car for the shuttle service on Prior Ave., St.Paul. Car 897 which had been used for this service was then transferred

to E. 7th St. Station for use on the "Burns Ave. Extension" line.

875-876 were permanently converted for double-end operation in April and June 1916 respectively (in the same manner as 897-899) for use on the "Randolph Extension" line in St.Paul.

847 was permanently converted for double-end operation in July 1920 (in the same manner as 897-899) in and assigned to Lake St. Station. This was done to provide one large double-end car at each operating station.

1230 was rebuilt during September 1931 for double-end operation on the Deephaven branch line as a shuttle car. The motorman's cab door, rear gates and steps were removed and replaced with two pair of narrow folding doors and steps on each platform on the "gate side" only. The fixed seats remained. Upon abandonment of the Deephaven branch line in August 1932 the car was transferred to the "Fort Snelling Stub" line.

Two cars, 1129 and 3, were rebuilt for double-end operation during 1932 which were the only two TCRT-built standard cars that were true double-end cars. That is, doors were located on diagonally-opposite platforms. (From the standpoint of the original design: on the "gate side" of the front platform and the "pole side" of the rear platform.) Reversible seats.

1129 was rebuilt during August 1932 with two pair of wide folding doors and steps on diagonally-opposite platforms. Intended for the "Western Ave." line in St.Paul, it was used instead mostly on the "Merriam Park" line in St.Paul.

3 was rebuilt during September 1932, with two pair of narrow folding doors and steps on diagonally-opposite platforms. This car was intended for the "Merriam Park" line but used instead on the "Western Ave." line.

Car 4 was converted for double-end operation during November 1939 by the addition of a second trolley base and pole, controller, brake valve and headlight. All longitudinal seats were installed to replace the original seating configuration. No changes were made to the carbody.This car was to serve as a spare for 1230 on the "Fort Snelling Stub" line.

TRAILERS

Car 952 was stripped of motors and controller [redacted] for use as a Trailer. It was permanently coupled to 1590 and renumbered 1590A. This motor-trailer set ran in competition with new lightweight train 2000-2000A to see which gave better service. The motor-trailer concept won the contest.

In 1921 it was decided to convert existing equipment into 25 additional motor-trailer trains similar to 1590-1590A. This was to be done as part of the program begun in 1920 to rebuild standard cars with front exit folding doors and steps, described in the following section. 240 cars were rebuilt with front exit doors and then work commenced on the 25 trains. Cars 737-761 were rebuilt into Trailers, July through September 1921. They received Twin City #11 trucks and weighed 24,900 lbs. each. All were re-numbered 200-224. 1590A (952) was re-numbered 225. The door control system was (1) motor car doors and gates manually operated by the motorman, (2) trailer front exit doors operated electrically and trailer gates operated manually by the trailer conductor. These motor-trailer trains were used only in rush hour service on heavy-traffic Minneapolis lines: "Chicago-Penn-Fremont", "Glenwood-4th Ave.", and "Minnehaha-Fort Snelling".

FRONT EXIT DOORS AND STEPS

Car 1450 was built in January 1911 with an experimental sliding front exit door and folding steps. It was unsuccessful as the step mechanism tended to freeze up in cold weather. The step mechanism was removed with the sliding door retained as the motorman's cab door.

Car 1788 was fitted with the front exit sliding door and step during February-March 1917; the appearance was the same as that used on 1450 in 1911 but with mechanical improvements. This still did not work out satisfactorily so the sliding door was replaced in 1918 with two pair of folding doors mechanically operated by the motorman. This proved successful and led to the decision to rebuild a major portion of the car fleet with front exit folding doors and steps.

Car 1590 with Trailer 1590A (ex 952) had both retained the motorman's cab doors. During October 1920 each car was equipped with front exit folding doors and steps. This was part of the program described in the following paragraph.

A decision was made to replace the motorman's cab door with front exit folding doors and steps on the 300 newest cars. The motor-trailer train (1590-1590A) was first done and then work began in October 1920 on the regular cars. This work continued through October 1921. The 300 cars rebuilt were 1554-1787,1789-1854.

On these first front exit cars the motorman operated the front door and the conductor operated the rear gates with a crank placed directly in front of the farebox. (TCL drawing 48D2739 "Operation of Gates by Conductor", March 1920.) This was not practical and was soon changed to the system of the motorman operating both doors and gates.

A photograph of a line-up of eastbound cars at the Wildwood Park unloading platform, supposedly for the Twin City Lines company picnic of 1921, was made for a group photograph. Only the rear part of the leading car is visible and only the number "2" can be discerned of the car number. I can't determine if this number is under the seventh or eighth body window. This car is a rebuilt front exit car as it has the smoke jack and deflector used with the under-floor stove. There is a modification on top of the gates and post sockets with mechanism on the letterboard over the gates. Ed Nelson says there was an experiment with either a pneumatic or electric gate opening mechanism. As of 5-8-1921 there were 58 front exit cars at Duluth Ave. Station, all fitted with marker brackets for extra service on the Stillwater Division. Those cars with the number "2" in the car number were 1628,1662,1720,1721,1724 and 1782.

At the same time, July through September 1921, motor cars for the trailers were rebuilt from cars still requiring front exit door/step work. It should be noted that on these motor cars the rear triple gates and steps had to be rebuilt to double gates and steps because of curve clearance limitations when pulling the trailrs. However consecutive train numbers were desired from 1600-1625 so that motor 1600 would be permanently coupled to trailer 200, etc. A re-numbering of cars was performed. The cars rebuilt as motor cars for the motor-trailer trains were as follows.

1599--renumbered 1601
1600
1603
1626--renumbered 1604
1605
1630--renumbered 1606
1607
1633--renumbered 1608
1640--renumbered 1609
1642--renumbered 1610
1644--renumbered 1611
1650--renumbered 1612
1655--renumbered 1613
1614
1615
1669--renumbered 1616
1617
1670--renumbered 1618
1671--renumbered 1619
1620
1699--renumbered 1621
1622
1766--renumbered 1623
1701--renumbered 1624
1625--renumbered 1602

Already rebuilt 1590 was renumbered 1625. 1602 was then renumbered 1590.

Front exit rebuilding continued in subsequent orders of 75 cars each.
December 1922 through May 1923: 1479-1553.
November 1923 through February 1924: 1404-1478.
May through July 1924: 1329-1403.

64 cars, 1254,1266-1328 were rebuilt July through December 1928. In addition 1254,1266-1309 were fitted with triple rear gates and steps (1310-1328 were originally built that way). All were re-classified as Class I-8, #8 rear step with three pair of gates opening 28" each. Twin City #9RB (roller bearing) trucks were built new for these cars which also received all-electric heat. These were the first cars with skirts around the front exit steps and rear gate steps.

Skirts were installed on all the other front exit gate cars during 1929-1931.

By the summer of 1930 some of the trailers of the motor-trailer trains had been disconnected and the motor cars ran alone. During 1930 1622/222-1625/225 were permanently disconnected. It was intended to make 1600/200-1608/208 and 1610/210 permanent trains and accordingly cross seats were installed in the trailers. The remaining trains were connected during the winter months only. On April 1, 1931, 1612/212-1619/219 were permanently disconnected. In the spring of 1933 the last of the motor-trailer trains 1600/200-1611/211, 1620/220 and 1621/221 were permanently disconnected.

Suburban cars 1146-1149 were rebuilt during January, March and April 1938 with front exit folding doors, steps and skirts, and re-equipped mechanically and electrically for permanent service on the Inter Campus line. The pilot was replaced with a fender, classification lights removed, and the arc headlight replaced with a Golden Glow incandescant.

LIGHTWEIGHT CARS

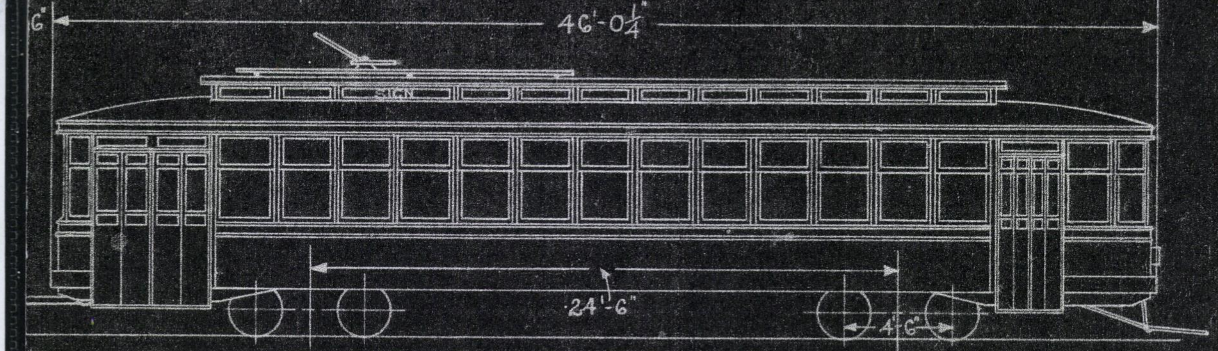
2000-2000A, renumbered 2000-2001, were rebuilt during July 1921. Each car received two pair of narrow front exit folding doors and steps at the front, and two pair of wide folding doors and steps at the rear. The front car, 2000, had electrically operated rear doors. The rear car, 2001, had electrically operated front doors. Both received Twin City electric heaters.

2002-2003 were separated in November 1923 so that each car could be operated individually, or the two cars could operate together as a two-car train. Both cars had electrically operated doors.

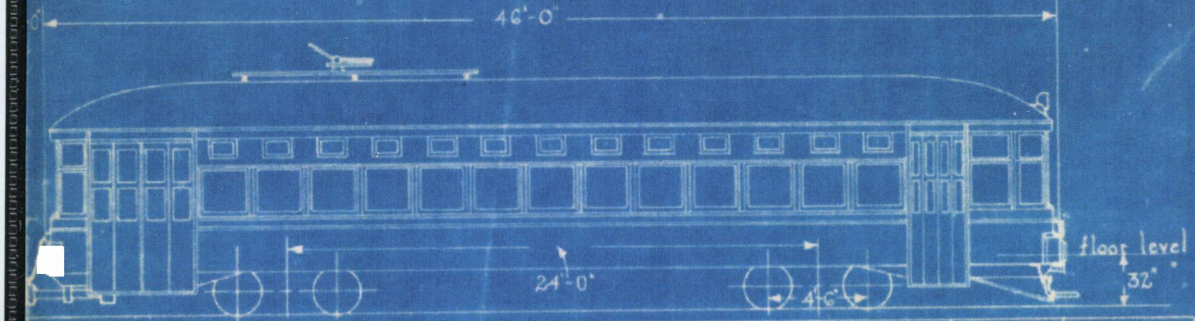
During 1928 the early lightweight cars were rebuilt. 2000-2001 were permanently separated for individual operation, each car being rebuilt with two pair of wide folding doors and steps on both front and rear platforms. 2002-2003 were permanently separated, each car being rebuilt with two pair of wide folding doors and steps on both front and rear platforms. 2004-2005 were permanently separated and modified to conform to 2006-2030 in appearance.

The lightweight cars were previously equipped for either one or two man operation. The interior arrangements were modified for exclusive one-man operation.
August 1930: 2006-2020, 2023; February 1932: 2000-2005,2021-2022,2024-2030.

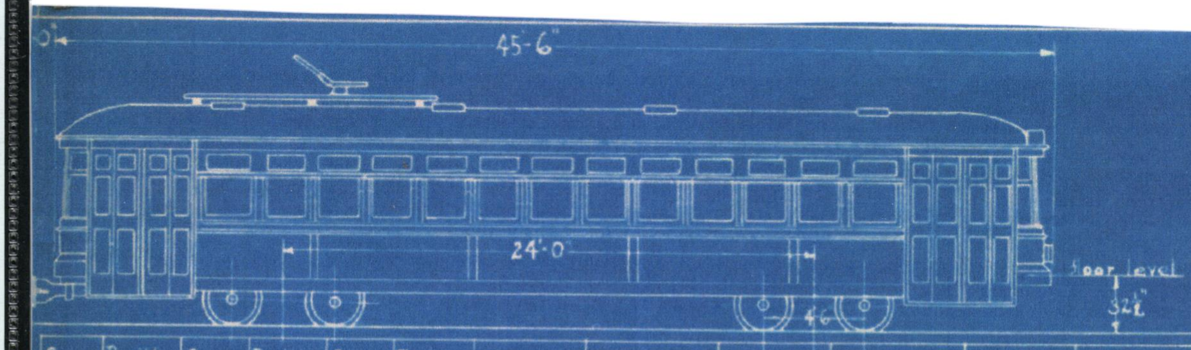
Lightweight cars 3 and 4 were rebuilt/converted respectively, for double-end operation in 1932 and 1939 respectively, as more fully described in the section on Double-End Operation.



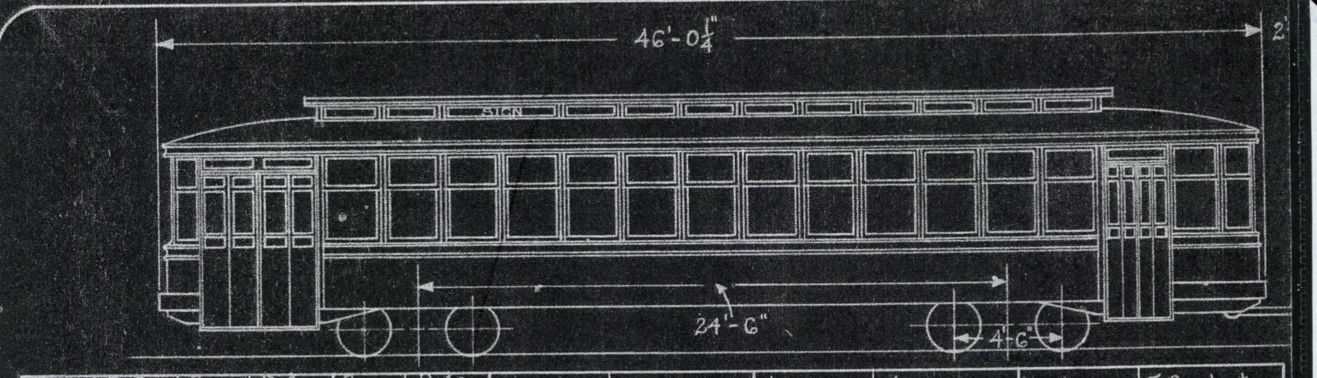
Car No.	Date Built	Car No.	Date Built	Car No.	Date Built	Make	T.S. Co.	Trucks	T.C. No. 12	Trolley Base	G.E. 13
2000	4-3-16					Weight	28000#	Brakes	Band	" Whee	7" dia.
						Cost	[redacted]	Journal Box	T.C. inside	Controller	G.E. 43
						Capacity	150 persons	Journal	Roller brg.	Heaters	T.C. electric
						I. Width	8'-6"	Axles	Steel, 5-3¾ lg	Register	Double
						O. "	9'-1"	Wheels	" 26" dia	Head Light	Incandescent
						Exits	F. & R.	Wheel Fit	4 7/16" dia.	Distance from rail to	
						F. Door	Folding	Gear	Steel, 72T, 4¼P	floor = 32"	
						R. "	"	" Fit	4½" dia.	Electrically operated	
						Platform	7" drop	Pinion	Forged, 15T, 4¼P	rear doors	
						Motors	4-G.E. 258 (35 H.P.)	Underframe	Steel		
						Seats	+& =	Aisles	2'-5"	Class	M-9-1
						Air Comp.	G.E. C.P. 27	Sign	Revolving, for		
						" Cylinder	8"		30 readings	Sheet No.	56



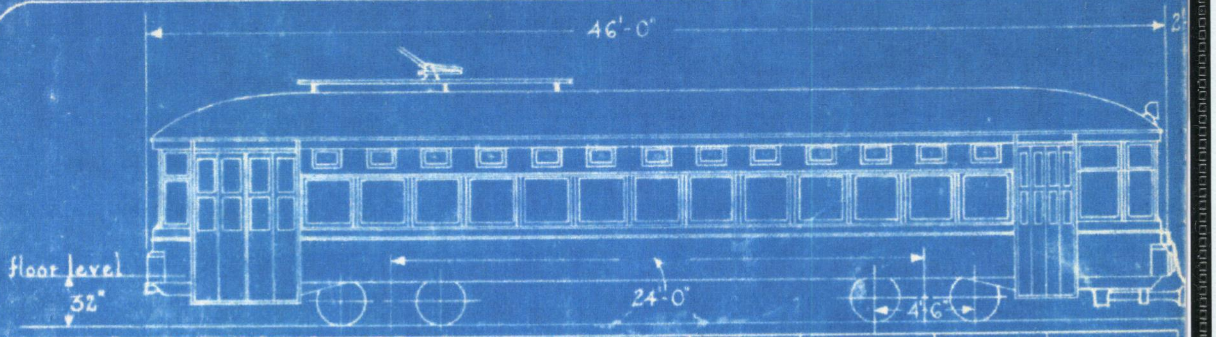
Car No.	Date Built	Car No.	Date Built	Car No.	Date Built	Make	T.S. Co.	Trucks	T.C., No. 12	Controller	G.E. K-65
2002	11-15-21					Weight	28,000#	Brakes	Band	Heaters	T.C., electric
						Cost	[redacted]	Journal Box }	Hyatt roller	Register	Double
						Capacity	160 persons	Journal	bearing	Headlight	Incandescent
						I. Width	8'-6¼"	Axles	Steel, 5-3¼" lg.	Tail-light	Electric
						O. "	9'-0"	Wheels	" 26" dia.	Coupler	Tomlinson
						Exits	F & R	Wheel Fit	4 7/16" dia.	Trolley Base	U.S. 15
						F. Door	Folding	Gear	Steel, 72T, 4¼P	" Wheel	7" dia.
						R. "	"	" Fit	4 7/16" dia.	Electrically-operated	
						Platform	7½" drop	Pinion	Forged, 15T, 4¼P	doors	
						Motors	4-G.E. 258 (34 H.P.)	Underframe	Steel		
						Seats	+& =	Aisles	2'-5½"	Class	P-14-m
						Air Comp.	G.E. C.P. 25	Sign	Illuminated		
						" Cylinder	6"		& changeable	Sheet No.	59



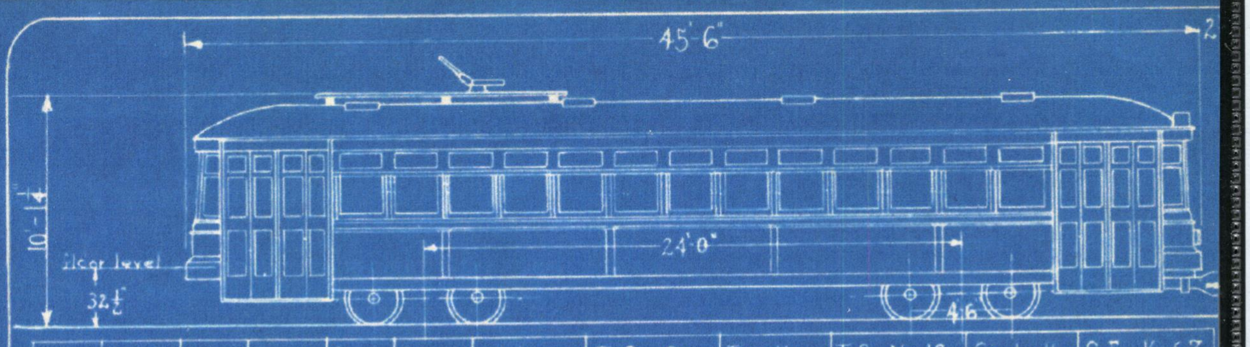
Cars	Built	Cars	Built	Cars	Built	Make	T.S. Co.	Trucks	T.C., No. 12	Controller	G.E. K 67
2004	7-15-26					Weight	29,480#	Brakes	Band	Heater	Rheostat
						Cost	[redacted]	Journal Box }	Hyatt roller	Register	
						Capacity	150 persons	Journal	bearing	Headlight	Incandescent
						I Width	8'-5¾"	Axles	Steel, 5'-3⅞"	Tail-light	Electric
						O "	9'-0"	Wheels	" 26" dia	Coupler	T.C. - AUTO.
						Exits	F & R	Wheel Fit.	3.9290"-3.9285"	Trolley Base	G.E. U.S. 20
						F Door	Folding	Gear	Steel, 73T, 4¼P	" Wheel	7"
						R "	"	" Fit	4.496"-4.495"	Air Operated	
						Platform	8" drop	Pinion	Steel, 14T, 4¼P	doors	
						Motors [redacted]	4-G.E. 258	Underframe	Steel	Seating Capacity-49	
						Seats	+& =	Aisle	2'-5½"		
						Air Comp.	G.E. C.P. 25	Sign	Illuminated		
						" Cylinder	7"		& Changeable	SHEET NO.	61



Car No.	Date Built	Car No.	Date Built	Car No.	Date Built	Make	T.S.Co.	Trucks	T.C.No.12	Heaters	T.C.electric
2001	4-3-16					Weight	28000#	Brakes	Band	Register	Double
						Cost	[redacted]	Journal Box	T.C.inside	Tail Light	Electric
						Capacity	160 persons	Journal	Roller brg.	Distance from rail to	
						I. Width	8'-6"	Axles	Steel, 5'-3¾" lg.	floor = 32"	
						O. "	9'-1"	Wheels	" 26" dia.	Electrically operated	
						Exits	F.&R.	Wheel Fit	4 7/16" dia.	front doors	
						F. Door	Folding	Gear	Steel, 72T, 4¼P		
						R. "	"	" Fit	4½" dia.	T. C. Tube coupler	
						Platform	7" drop	Pinion	Forged 15T., 4¼P		
						Motors	4-G.E.258 ([illegible] H.P.)	Underframe	Steel		
						Seats	+&=	Aisles	2'-5"	Class	M-9-1
						Air Comp.	G.E.C.P.27	Sign	Revolving for		
						" Cylinder	8"		30 readings		



Car No.	Date Built	Car No.	Date Built	Car No.	Date Built	Make	T.S.Co.	Trucks	T.C., No. 12.	Controller	G.E. K-65
2003	11-15-21					Weight	28,000#	Brakes	Band	Heaters	T.C. electric
						Cost	[redacted]	Journal Box	Hyatt roller	Register	Double
						Capacity	160 persons	Journal	bearing	Headlight	Incandescent
						I. Width	8'-6¼"	Axles	Steel, 5'-3½" lg.	Tail light	Electric
						O. "	9'-0"	Wheels	" 26" dia.	Coupler	Tomlinson
						Exits	F.&R.	Wheel Fit	4 7/16" dia.	Trolley Base	U.S. 15
						F. Door	Folding	Gear	Steel, 72T, 4¼P.	" Wheel	7" dia.
						R. "	"	" Fit	4 7/16" dia.	Electrically-operated	
						Platform	7½" drop	Pinion	Forged, 15T., 4¼P	doors	
						Motors	4-G.E.258 ([illegible] H.P.)	Underframe	Steel		
						Seats	+&=	Aisles	2'-5½"	Class	P-14-m
						Air Comp.	G.E., C.P.25	Sign	Illuminated		
						" Cylinder	6"		& changeable		



Cars	Built	Cars	Built	Cars	Built	Make	T.S. Co.	Trucks	T.C., No 12.	Controller	G.E., K-67
2005	7-15-26					Weight	29,480#	Brakes	Band	Heater	Rheostat
						Cost	[redacted]	Journal Box	Hyatt roller	Register	
						Capacity	150 persons	Journal	bearing	Headlight	Incandescent
						I. Width	8'-5¼"	Axles	Steel, 5'-3½"	Tail light	Electric
						O. "	9'-0"	Wheels	" 26" dia	Coupler	T.C., Auto.
						Exits	F.&R.	Wheel Fit	3.9290"-3.9285	Trolley Base	G.E., U.S.20
						F. Door	Folding	Gear	Steel, 73T, 4¼P	" Wheel	7"
						R. "	"	" Fit	4.496"-4.495	Air operated	
						Platform	8" drop	Pinion	Steel, 14T, 4¼P	doors	
						Motors	4-G.E.258	Underframe	Steel	Seating Capacity = 49	
						Seats	+&=	Aisles	2'-5½"		
						Air Comp	G.E. C.P.25	Sign	Illuminated		
						" Cylinder	7"		& Changeable	Sheet No.	

PRIVATE CAR

A S.W.O. dated March 1919 provided for equipping an Instruction Car for the Employment Bureau. As of the January 1, 1922, Valuation the Private Car was being used as an Instruction Car. According to the Valuation Report the car then had no motors, controller or air brake equipment. Thus the car was not intended to be operable, but only for classroom type training. By 1925 it had been placed in the Snelling Car Storage Building. The car was destroyed when that building burned August 17, 1925.

ONE/TWO MAN OPERATION

Car 1854 was rebuilt for one/two man operation as a test car, being completed May 20, 1931. The car retained the triple rear gates and steps but the narrow front exit doors were replaced with two pair of wide folding doors and steps. The triple rear gates were, after experience with 1328, replaced with two pair of wide folding doors and steps identical to those on the front platform.

Car 1328 was next rebuilt for one/two man operation with two pair of wide folding doors and steps on both the front and rear platforms, being completed June 30, 1931. It should be noted that this car was one of the latest front-exit cars having rebuilt as such during 1928.

Both 1328 and 1854 performed so well that it was decided to rebuild additional cars for one/two man operation. During October and November 1931 35 cars, 1293-1327, were so rebuilt, all of them from the latest front-exit cars rebuilt during 1928.

It was decided to continue rebuilding additional cars for one/two man operation. The highest numbered cars were to be rebuilt first, working in descending numerical order, but only as the cars were due for scheduled rehabilitation.

100 cars were rebuilt for one/two man operation April through July 1932. The original list probably referred to the oldest paint dates. However 13 cars with K-37 controllers were not done being replaced with cars having K-43 controllers. The cars rebuilt were: 1669,1675,1700,1702, 1705,1709-1711,1713,1715-1719,1721-1723,1726,1727,1729-1731,1733-1739,1741,1743,1746,1751,1752, 1756,1757,1760-1772,1774,1778-1782,1786,1788,1789,1791-1794,1796-1798,1800,1802,1803,1805-1807, 1811-1813,1816-1821,1828,1830,1832-1834,1836,1837,1839-1848,1850,1851 and 1853.

As early as July 1926 the Master Mechanic was receiving complaints that the 1100 series cars used on the "Jackson St." line in St.Paul required constant daily repairs to the roof canvas on the "pole side" of the cars. The narrow track center on Jackson St. between 13th St. and 14th St. was causing the cars to rub together if they happened to pass at that location. It was not until 1929 that the bodies of 1124-1133 were moved 1" off center to prevent the rubbing. In September 1932 cars 1124-1128 and 1131 were rebuilt for one/two man service on the "Jackson St." line.

Another 100 cars were rebuilt for one/two man operation March through June 1933. The original list included cars with the oldest paint dates, but it was later decided to include only cars with G.E. 200 motors. The original list included cars with G.E. 216 motors. The cars rebuilt were :
1654-1668,1670-1674,1676-1699,1701,1703,1704,1706-1708,1712,1714,1720,1724,1725,1728,1732,1740, 1742,1744,1745,1747-1750,1753-1755,1758,1759,1773,1775-1777,1783-1785,1787,1790,1795,1799,1801, 1804,1808-1810,1814,1815,1822-1827,1829,1831,1835,1838,1849 and 1852.

It was decided to rebuild an additional 35 cars, cars with G.E. 216 motors and K-37 controllers. The work was performed during August and September 1933. The cars rebuilt were 1538,1540,1541, 1543,1544,1548,1551,1552,1556,1559,1560,1565-1567,1569-1572,1574,1575,1577-1583,1587,1589,1591, 1593,1594 and 1596-1598.

Another 100 cars were rebuilt for one/two man operation from March through July 1934. A number of cars not rebuilt had older rehabilitation dates than some of those rebuilt. Perhaps type of motors had some bearing on which cars were chosen, perhaps chiefly or only cars with G.E. 216 motors and K-37 controllers. The cars were 1465-1467,1469,1470,1475,1479,1480,1482,1488, 1494-1496,1498,1499,1502,1506-1508,1512,1515,1517-1522,1524,1527-1531,1533,1535,1536,1539,1545, 1546,1549,1550,1553,1554,1557,1558,1564,1568,1573,1576,1584-1586,1588,1590,1595,1599,1600,1602, 1603,1605,1607,1609,1611-1616,1619-1621 and 1625-1653.

Another 100 cars were rebuilt for one/two man operation from June through December 1935. 51 of the cars were to be from 1415-1624 with Twin City #6/Twin City #8 trucks, G.E. 216 motors, and these were rebuilt. 49 cars were to be from 1336-1408 with Twin City #5 trucks, G.E. 213 motors; some of these were rebuilt but 31 old standard cars were rebuilt instead of 31 front-exit cars (numbers ranged from 1336 to 1381). The probable reason was the quantity of front-exit cars required for service needs. The cars actually rebuilt were 1219-1229,1233,1235-1253,1382, 1384-1398,1402,1408,1415,1417,1420,1424,1425,1430,1433,1437,1440,1441,1446,1448-1451,1454,1462, 1464,1468,1473,1485,1489,1492,1497,1501,1503-1505,1509-1511,1513,1523,1525,1526,1532,1534,1537, 1561,1562,1592,1601,1604,1606,1608,1610,1617,1618 and 1622-1624.

It was intended to rebuild 50 cars for one/two man operation during 1936 but delays in deliveries of second-hand motors and controllers caused only 30 cars to be completed in November 1936: 1186-1201,1203,1205-1211 and 1213-1218. These cars required so much rebuilding that when finished they were practically new and the weight was greatly reduced.

The other 20 cars were completed in March 1937: 1166-1185. These cars also required so much rebuilding that when finished they were practically new and the weight was greatly reduced.

Because of an equipment shortage brought about by increased traffic due to wartime conditions five additional cars were rebuilt for one/two man operation during May 1942: 1487,1490,1491,1500 and 1516. All had the wood sides and ends replaced with steel plate.

STEEL-PLATED SIDES and ENDS

Steel sheathing, 1/16" steel, was placed on 287 one-man cars from 1938 to 1950, the cars being any on which most of the wainscoting was found to be rotting. Car numbers ranged from 1166 to 1854. The first two steel-plated cars were 1724 and 1759 done in 1938. The end plates on 1724 were not sloped as were those on all subsequent cars. On three cars done in 1939, 1543, 1570 and 1834, all rivets were puttied and painted over so all the plates appeared as smooth as the siding (Masonite) on the lightweight cars. However this made it quite difficult to remove the sections when necessary. 1543 was changed in 1944 and 1570 in 1949. 1834 was wrecked before the change could be made.

SERVICE EQUIPMENT

Work Car Extension Cabs: these were installed for the protection of track crews riding to construction projects during the winter months. Apparently some of these installations were not permanent.

From S.W.O.'s:	
Sep 1910	11
Dec 1910	18
Dec 1916/Jan 1917	15 and 17
Mar 1917	55
1917	16
1929	8
From other information:	
Dec 1911	12
1915	51
?	19 (photograph)
From observation:	
	7
	13
	52

Rail Grinder 35 was converted to a Sand Blasting Car in March 1911. One Allis-Chalmers D-4 air compressor was installed.

Sand Car 44 was converted to an Oil Car, May 1912.

Built "and erected a tower" on Work Car 48, October 1912. This apparently refers to the cab built on the rear deck for use as a combination Wire Car-Wrecker. It was used by the Track Dept. in summer and by the Owen St. Station as a Wire Car in the winter until replaced by Wire Car 72 in 1917. After 1917 it was used as the Owen St. Station winter Sand Car and summer Wrecker until 1932 when it was transferred to North Side Station as a Wrecker. In January 1952 the rear cab was removed and the car reverted to a standard Work Car.

Three Work Cars were "equipped for hauling sand" in October 1921: 14, 16 and 18. Work Car 12 was used as a Sand Car at Nicollet Station during the winter of 1920-1921. In January 1925 Work Cars 14, 16 and 18 were rebuilt with a large cab in the center of the deck containing machinery and storage bins for use as Sand Cars. In June 1952 the sand cabs were removed from cars 13 and 16 which reverted to standard Work Cars.

Passenger Car 762 was rebuilt to Supply Car 2 in November 1921 replacing old Supply Car 2 which was placed in the Snelling Car Storage Shed.

Auger motors were installed on Sand Cars 43-45 in 1922.

Cupola Cars 58 and 61 were rebuilt during 1925. The thermit rail welding machinery was completely removed and the entire carbody enclosed for use as Supply Cars in "hauling track materials" (included bags of cement and rock salt).

Snow Plow 38 had the double-shear plow replaced with a single-shear plow in 1932 after abandonment of the "Stillwater" line.

Work Car 46 was fitted with a weed cutter on the front end sill. This may have come from Work Car A-13 when it was scrapped in 1936.

During October 1936 Passenger Car 1134 was rebuilt to Supply Car 95 and equipped with the jib hoist and other fixtures from Supply Car 2.
Suburban Car 1261 was rebuilt in September 1938 to Rail Grinder 96. The rail grinding equipment consisted of four 10" air brake cylinders connected to 20 3"x4" grinding stones. This provided 240 sq. in. of grinding surface under 92 lbs. per sq. in. pressure with 70 lbs. of air pressure in the cylinders. The car retained its Baldwin #4 trucks, G.E. 73 motors, and Type M control (C-6 master controller) but the gear ratio was changed to 15:75.

Shifter Cars 26 and 28 were completely rebuilt during March 1943 with new bodies.

Work Car 47 was rebuilt in 1945. The side stakes and drop panels were removed. Four individual steel dump containers were mounted on the deck, attached by hinges on one side so that each could be lifted to a tilting position in order to dump the load. Two crane hoists were mounted on the "pole side" of the car, one crane between two containers, to lift the containers. In 1946 a steel winch, five-ton capacity, was installed on the car to lift the dump containers.

Passenger Car 1349 was rebuilt during July 1947 to Supply Car 97. The rear gates and steps were removed and the rear platform enclosed. The front-exit doors and steps were retained; however the gate control handles were not changed--to open the front doors both handles had to be turned. Large sliding doors were installed on each side replacing the 6th and 7th windows. Windows 8 to 13 on both sides were boarded over. The stove was removed and four electric heaters installed in the cab. In 1951 the car was repainted, roof canvas replaced, line breaker and field shunt installed inside the car, LB2 device installed on the controller, back-up controls installed on the rear platform, and spring return installed on the motorman's air brake valve. The usual schedule followed was: Monday, Lake St. Station; Tuesday, Nicollet and Snelling Stations; Wednesday, North Side Station; Thursday, East Side Station; Friday, Duluth Ave. Station.

Crane Car 50 was extensively rebuilt. A new motorman's cab was installed in March 1947.
The original Brown Hoisting Machinery Co. crane was removed in March 1948 and replaced with a new Orton Crane & Shovel Co. Model 8 crane.

SERVICE EQUIPMENT
ADDENDA

WORK CAR 13

A photograph of Work Car 13 dated 4-18-1950 shows it with an Extension Cab and NO Sand Cab. EHN is the source of 13 "was Sand Car at 1-16-1925". (He also reported Work Car 12 "Listed as Nicollet [Station] Sand Car for winter 1920-1921".) I wonder if he considered 12 and 13 as temporarily used as Sand Cars, but without a sand cab. ERM reports the Sand Cabs removed from 13 and 16 in June 1952. Obviously 13 is incorrect.

WORK CAR 19

Early undated photograph of 19 in the Como Gravel Pit shows it with an Extension Cab.

MAINTENANCE AND REHABILITATION PROGRAMS

A systematic cleaning program was followed for each car, performed at the operating stations. The exterior was washed, floors swept, and interior wiped out daily. Every nine days the floor was scrubbed, and every seventy days the interior was given a thorough cleaning with particular attention given to hidden corners.

Minor electrical and mechanical repairs were performed at the operating stations. Each car was inspected every other day for wheel and brake defects. Servicing and lubrication were performed at specified intervals on a systematic basis. As of 1944 each car was inspected every 14 days as to lubrication and condition of trucks, controller, line breaker and pneumatic equipment. All car body repairs, most electrical and mechanical repairs, and all major repairs and overhauls were performed at the Snelling Shops.

General overhauling, or rehabilitation as TCRT termed it, was performed every eighteen months on cars in heavy service, or every four to five years on cars in light service. When a car arrived at the shops for rehabilitation, it was first placed on an outdoor receiving track for stripping. Here the readily removable parts such as doors, window sash, seat cushions, and miscellaneous fittings were taken out and sent to the appropriate shop department. Seats were refinished or replaced; new curtains, cushion covers, steps and gates were supplied if those removed were at all worn; bell and battery boxes, push buttons, and other fixtures were replaced; and the window sashes were replaced or renewed by being trimmed true and strips glued on all worn surfaces. The truck electrical and brake connections were loosened so that the trucks could be readily removed.

The car was then run on the transfer table and into the main repair bay in the erecting shop, being spotted on one of two tracks set aside for car rehabilitation. Two special cradles were placed around the carbody and hooks from the carriage of the overhead traveling crane attached to the cradle. The carbody was lifted clear of the trucks which were run out so the body was free to move. A differential gear on the crane consisted of a pair of drums with one set of cables reversed so that as one lifted the other lowered and equal amount. Thus by means of the specially designed cradles and this differential gear, the carbody was rolled over on its side and placed on sawhorses. The cradles were then removed and the carbody was ready for inspection and repair work.

The trucks were sent to the truck shop where the traction motors were removed and gone over in the electric shop. Truck frames and springs, wheels, axles, journals, etc., were rigorously inspected, cleaned, and necessary repairs or replacements made. All parts were then repainted and reassembled.

Inspection of the framing was an easy matter with the carbody turned on its side, and many defects were discovered which would not be noticed if an inspector had to get into a pit and look upward dependent upon a portable lamp for light. Rotted wood parts and timbers, rusted hangers and air tanks, and rusted metal frame parts were more easily discovered. It was also easier to remove and reattach equipment fastened beneath the carbody, and electrical wiring could be done with comparative ease. Underbody, electrical and airbrake equipment were removed and sent to the appropriate shop department for inspection, cleaning and repair. While one crew worked on the exterior of the carbody, another crew worked inside the carbody from planks laid on the side which was in the lowest position. Painters could clean and varnish the headlining and obtain a better finish in less time and with less fatigue than when the work was done overhead. At the same time attention was given to the roof as it was felt that the workmen were able to do a better job while standing erect and facing the roof than when they had to crawl over it with relatively insecure footing and forced to work out toward the edge. The underside of the carbody received penetration of protective paint resulting in longer life of the framing, floor and underbody equipment. The underbody equipment was then repainted and installed.

The process of righting the carbody was similar to that for turning it over, the motions merely being reversed. The righted carbody was set on the sawhorses and the exterior of the carbody inspected. All rotted, splintered or rusted parts and components were repaired or replaced. New mastic floors were placed on the platforms, and the inside floor patched or relaid. Renovation included a complete refinishing inside and outside. Paint was burned off irregular surfaces and thoroughly sanded off elsewhere. A new finish was then applied by hand which required 14 days in the paint shop. Then the various parts and fittings first removed were reinstalled.

The policy as of 1913 was to keep an average of 30 cars in the main paint shop undergoing a thorough refinishing while four more cars were having the finishing touches added in an adjoining shop. By 1938 the policy was to repaint each car every two to two-and-one-half years at a rate of 25 cars per month. Rehabilitation was performed every five years at a rate of 15 cars per month. At this time 265 men were employed in the shops plus 165 mechanics in the car stations.

ETW
NOV 1908

KEEPING SPARE TRUCKS

Speaking of maintenance matters in general, the other day, Mr. W. J. Smith, master mechanic of the Twin City Rapid Transit Company, of Minneapolis, emphasized the economy they have found in the practice of keeping a number of spare trucks at the main repair shops and at the division car houses. Then when a car comes in for repair or overhauling on electrical equipment, wheels or trucks, the car body is immediately shifted to another set of trucks and is at once returned to service. If the change is made at the car houses the old trucks are hauled to the main repair shop for attention. The truck and motor repairs are then made in regular order. For a total equipment of 600 cars it is necessary to have about 25 extra trucks.

Aside from keeping more of the cars in service, the chief advantage in this practice is the opportunity it affords for equalizing the work at the shops. The men in the truck and motor departments can keep busy all day as there is always a certain regular amount of work ahead of them. Formerly when the entire car was kept in for repairs, it was necessary to rush the work so as to have as many cars as possible ready at 4:30 for the evening schedules. After that hour the men were apt to fuss around till quitting time, doing odd jobs, sweeping up and killing time generally. Now the entire force can keep busy throughout the day and there is a far more even distribution of work and time.

The truck department in the new Snelling avenue shops has no pits whatever. The shops are amply equipped with overhead cranes and hoists and all truck work is done from above or from the sides. Wherever possible the truck and motor-parts are lifted bodily out of the truck and put on a table or bench where the repairs can be made to the best advantage with plenty of light and elbow room. For instance an entire motor is "yanked" out and placed on a bench where the men can get at it conveniently and quickly.

A point is made of centralizing as much of the general repair work as is possible at the main shops. It is held that one man at $2.00 a day at the shop, where he is more thoroughly a part of the organization and where he is under competent supervision, will do more work than two or three men will do at the car house.

ERJ 10-11-1913

CAR DESIGN

There are but two types of car which are standard with the company. One is known as the older type and is 8 ft. 6 in. wide, with wood underframe. The other is 9 ft. 1 in. wide with steel underframe. The latter is lighter, stronger and has more area of glass in window sash. Since manufacturing was begun there has been a constant effort to reduce car weight. The last car turned out, 46 ft. 8 in. x 9 ft. 1 in., weighed, complete with storm windows, sand in boxes, water in heating system and coal in bin, 42,100 lb. actual scale weight. The type built eighteen months earlier weighed 46,200 lb., and that of a few years earlier 48,000 lb. The suburban type built eight years ago weighed 59,000 lb. These weights apply to cars seating forty-eight passengers, the standard seating capacity for all cars on the Twin City lines.

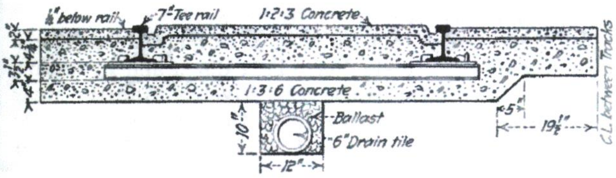
The lightening process has been carried on in all parts of the car and equipment. Wheels were reduced to 425 lb. for the 34-in. size, and these are scrapped as light as 310 lb. with a diameter of 31 in. Twenty-five pounds has been added recently as a concession to the manufacturers. Axles have been brought down to a minimum safe size with allowance for wear. A 2-in. hole from end to end eliminates 62 lb. of useless weight. Brake rigging and trucks have been lightened by the use of better steel and forgings, thus permitting smaller parts to be used. The greatest saving here was obtained by doing more machine work on castings. These have to be made larger than necessary for strength on account of foundry limitations, and 25 per cent or more can be machined off in many cases without danger. It was found also that steel bolsters could not be cast straight and uniform. These were therefore planed off with a saving of 150 lb. All parts of the bolster were at the same time made perfectly true. In the body all woodwork was made 1/16 in. thinner, and the steel underframes were lightened to the limit of safety. Even the grab-handles on the seat backs were trimmed down.

CAR CLEANING AND RENOVATING

In regular maintenance, cars are now washed outside, and floors are swept daily with a careful wiping throughout. At nine-day intervals the floors are scrubbed. Every seventy days there is a thorough cleaning and hidden corners receive special attention. A thorough overhauling of the car body occurs every eighteen months for cars in heavy service and every four to five years for those in light service. During this process, which costs about $260 per car, new mastic flooring is placed on the platforms, the inside floors are patched or relaid, the seats are removed and refinished or replaced with new ones, new curtains, cushion covers, steps and gates are supplied if they are at all worn, and bell and battery boxes, push buttons and other fixtures are replaced. By being trimmed true and then having strips glued on all of the worn surfaces the sashes are made practically new. For window curtains, woolen terry has been found most satisfactory in the long run in spite of its high price.

Renovating the car exteriors includes a complete refinishing inside and out. Paint is burned off irregular surfaces and thoroughly smoothed off elsewhere. A new finish is then applied, the work requiring the car to be about fourteen days in the paint shop. When it leaves the shop with its fresh bright coat of light chrome yellow and aluminum bronze striping the car in appearance as well as in fact is as good as new. On an average thirty cars are kept in the main paint shop undergoing a thorough refinishing, while four more have the finishing touches added in an adjoining shop. This number keeps the force well occupied. All of the painting is done by piece work.

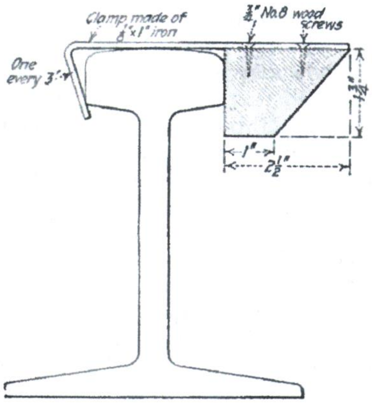
Solid concrete construction was first used in 1913, when about 36,900 ft. of track was built, using white oak ties, 7-in. T-rail, with thermit joints and granite block paving. At the present time, this track is in almost perfect condition and practically no money has been spent on it for repairs. The following year 4,260 ft. of track was constructed, using 100-lb. A.S.C.E. rail, Carnegie steel ties, bolted joints and various types of paving. Today the base, ties and general track structure are still in good condition, but some repairs to the bolted joints have been necessary, and the wood block paving deteriorated badly in places.



Where Concrete Paving Is Used the Concrete Is Poured in Two Courses

During several following years wood ties were again used. This construction has stood up as well as the track built in 1913. In 1918 5,690 ft. of single track was constructed in solid concrete, with Carnegie steel ties, concrete paving and 80-lb. A.S.C.E. rail. No repairs have been made up to the present time on this track. In 1920 the use of International steel twin ties was begun, and since that time 35,100 ft. of single track has been constructed in this way. The results that have been obtained both in the matter of cost and in the quality of the work have been satisfactory. In general, the cost of the material is greater for the steel tie structure and the cost of labor somewhat less. This is due to the fact that steel ties are considerably easier to handle and the track can be brought to gage with less effort.

Where concrete paving is used the concrete is placed in two courses. The base course is placed first and the concrete thoroughly tamped under the rail and ties as it takes its initial set. Immediately thereafter a second or finish course containing a richer mixture is placed by a second gang of workmen and a second concrete mixer. This is done at once, in order that the concrete may set in a single mass without a seam. When T-rail is used flangeways are provided by the use of wood forms. These are of pine or cypress and are made in 12-ft. lengths. The design is shown above.



A Wooden Form of This Shape Is Used to Make the Flangeways

Experience with monolithic concrete construction in Kansas City shows that little damage occurs through expansion of the rail and very few cracks occur in the concrete surface. Paving of other types has been found, in fact, to be more subject to this trouble than is concrete paving. The absence of trouble from this source may be due to the fact that the concrete and steel have very nearly the same coefficient of expansion.

Keeping Cars Clean in the Twin Cities

Regular Reports, Systematic Routine and Continual Vigilance Found to Be the Secret of Obtaining Uniformly Good Results

THAT clean, well-painted, fresh-looking cars are an important element in keeping car riders pleased with the service rendered by the street railway company has come to be accepted by most progressive operators. It has also been demonstrated that money invested in paint and scrub brushes is at most a very small part of the total cost of maintenance of equipment, but represents one of the most effective methods of obtaining favorable publicity.

In the Twin Cities, systematic effort and continual vigilance have been found by the mechanical department to be the two most effective factors in keeping cars in this desirable condition. This kind of work requires supervision by a comparatively rare type of man—one who has the ability to organize his work for efficiency and who, at the same time, has sufficient imagination to maintain an enthusiastic attitude toward a type of work which is performed with common labor and which is sometimes looked on by mechanical men as being a necessary nuisance. It is needless to say that it also requires interest, enthusiasm and continual vigilance on the part of general executives to keep such a man pitched up to a key of interest that will produce consistently good results.

Careful analysis of various methods of carrying out the work of car cleaning and washing have led to the subdivision of this work, so that each car is kept at all times in the best possible condition consistent with reasonable cost. This subdivision of cleaning activity includes the following operations: Sweeping, dusting, scrubbing, washing and general car cleaning.

A total of 850 cars are in service on the lines of this company. During the month of June, 28,806 cars were swept. This includes sprinkling sweeping compound over the floor, sweeping this out thoroughly, and spraying the interior of the car with disinfectant. Eighteen men are engaged in this work, and the average time per car is approximately 8.66 minutes. It is evident that the total number of cars gone over per month is equivalent to sweeping each of the 850 cars practically 34 times per month, or a little more than once per day.

Dusting consists of thoroughly wiping seats, shades, windows and the other interior parts of the car, to remove interior dust. Twenty-two men are engaged in this work, and the average time per car is 31 minutes. During the month of June, 7,749 cars were gone over in this way, which is equivalent to dusting each car on the system nine times during the month, or a little better than twice per week.

Five men are engaged in the work of scrubbing floors. Thorough cleanliness is considered the best form of sanitation, and is superior to the use of large quantities of disinfectants. The practice in scrubbing cars, therefore, is to give the oak floors a thorough old-fashioned hand and knee scrubbing, as a housewife would scrub the floors of her home. During the month of June, 1,073 cars were so scrubbed, in an average time of 59 minutes per car. This is equivalent to going over each car about 1¼ times per month.

When a car is washed, the outside is gone over thoroughly with lukewarm water and long-handled

(over)

brushes. If the car is unusually dirty, as is sometimes the case after protracted periods of bad weather, a weak soap solution is applied first, and is then rinsed off with clean water. Pails and brushes are used for car washing in preference to spraying methods, due first to the flexibility and simplicity of this method which eliminates an excessive amount of car shifting, and also to the economy in the use of water. During the month of June, 8,104 cars were washed by 16 men, in an average time of 22½ minutes per car. The total number of cars gone over is equivalent to washing each car 9½ times per month.

When a car is given a general car cleaning, it is gone over both inside and out. Ceilings, curtains, windows, floors and exterior are thoroughly washed and scrubbed when necessary. Oxalic acid is used to remove tenacious dirt on painted surfaces. The time spent on a car is 12.07 hours, and when it is completed all dirt has been removed from corners as well as from those parts that show more conspicuously. During the month of June, 261 cars were cleaned in this way. This is equivalent to putting each car through this process approximately once every three months. There are thirteen men engaged in this work.

Systematic reports by the man in charge of car cleaning to the head of the mechanical department form the basis of following up this work. These reports are made up in detail, so that the head of the department can tell at a glance whether any part of the work is being allowed to lag, or whether the efficiency of the men doing the work is being allowed to fall off. It is only by virtue of continual interest on the part of the department head that this work can be kept from lagging either in thoroughness or volume. Total labor costs for car cleaning in the Twin Cities average approximately $2.75 per thousand car-miles. It is part of the price of keeping patrons pleased with the car service, and reductions in expenditures for this purpose represent poor economy from the standpoint of the company's relations with its patrons.

Corrosive Effect of Slag

Detroit Investigation Shows 54 per Cent of Base of Rails Eaten Away in 21 Years

By W. R. Dunham
Executive Engineer Department of Street Railways, City of Detroit

The effect of slag on a rail section is brought out very clearly in the illustration accompanying this article. Not only is the corrosion shown but some light is thrown on the difference between wear on the head of the rail due to traffic and what has actually occurred, or the apparent wear which would be indicated from an inspection of the head surface only.

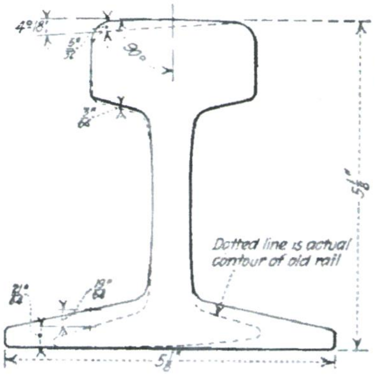
The sketches are from an actual section cut from the rail after its removal from the track. The rail, an 85-lb. A.S.C.E., was laid in 1903 and removed early in 1924. The track area from the top of the ties was back-filled to the head of the rail with furnace slag.

The accompanying table gives under "New Section" the areas in square inches and per cent of metal in the head, web and base and is taken from a steel company handbook. The areas and percentages given under "Worn Section" are for the section as shown by dotted lines, the areas being derived by planimeter. The last column in the table gives the losses in per cent of the different rail parts from corrosion. It will be noted that there has been an apparent gain in the web area. This is due to the increased length of the fishing section on account of the corrosion on the base.

DISTRIBUTION OF METAL OF RAIL SECTIONS NEW AND AFTER 21 YEARS IN THE TRACK

Rail Part	New Section		Worn Section		Worn Section
	Area in Square Inches	Area in Per Cent of Total	Area in Square Inches	Area in Per Cent of Total	Per Cent Change in Area
Head	3.50	42	3.25	50	7.1—
Web	1.75	21	1.85	28	5.7+
Base	3.05	37	1.40	22	54.0—
Total	8.30	100	6.50	100	21.7—

It is interesting to note that, under traffic, the head and web on the gage side have bent down and in toward the center line of the track respectively. Had the wear of this rail been measured from the surface, it would have indicated a total wear of $\frac{5}{32}$ in., or 0.0372 in. wear per 5-year period. It will be noticed, however, that nearly half of this amount is due to a vertical bending of the head. The actual wear, therefore, is but 0.0260 in. or 69.9 per cent of the surface indication per 5-year period. It would be interesting to know how many of the rails on which the wear is measured from time to time in connection with the question of renewal for wear have this same feature, so that no differentiation has been made between the actual abrasion and the abrasion plus the bend in the head and web.



Original and Final Section of Rail Laid in Slag, Detroit

Photomicrographs of the head were also made in order to determine the reduction in height due to cold rolling. While the effect of the cold rolling was shown, the amount of this reduction was negligible in so far as measuring for loss of head surface due to wear.

The apparent surface wear of a rail head as indicated by an inspection of the surface only was really made up of three things: Abrasion, compression of the metal from the wheel passing over it and the depression of the head through the bending of the web from the loadings carried.

As cinders and slag have been recommended for ballast, this article is pertinent in showing the effect of slag on rails in contact therewith.

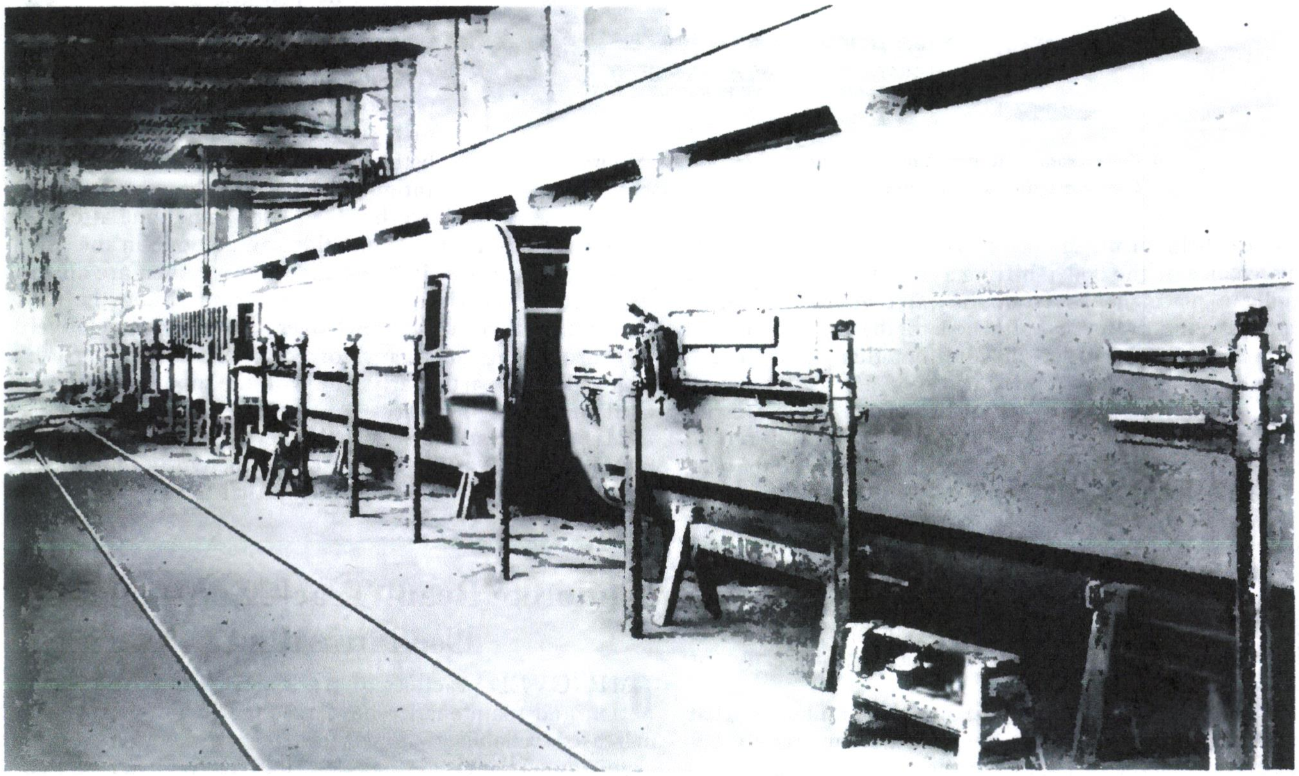
In an article appearing some time ago in the Electric Railway Journal, giving an improved method of placing concrete under steel ties in new track construction as worked out by the Cleveland Railway, the method used was described as follows: ". . . the material used being as mix of slag screenings and cement." This mixture was tamped under the steel tie plate and in intimate contact with both the steel tie plate and the steel channels composing the tie. It is presumed that after the tie fails from corrosion, this failure will be used as an argument against substitute ties, while the practice of using slag ballast against steel rails will be continued.

The rail section from which these sketches were made was of great interest to the writer, and it is hoped that this article will be of interest to way engineers generally.

Turning Cars on Their Sides

Facilitates General Repairs

By means of cradles and specially fitted cranes entire car bodies are turned over readily in the Twin City shop. Work on the under side is made much easier



A row of cars in the Twin City shop. The two in the foreground are undergoing repair while they are turned over, while those in the rear have been turned back to the upright position for completion of the overhauling

CAR repair work has been facilitated in the St. Paul, Minn., shop of the Twin City Rapid Transit Company through the adoption of a plan of turning car bodies edgewise for general overhauling. The plan, which was devised by W. J. Smith, master mechanic, has made possible more effective inspection to detect rotted and corroded parts and has made the substitution of new parts comparatively easier.

When a car arrives at the shop for general overhauling it is first placed on an outdoor receiving track for stripping. Here the readily removable parts, such as doors and window sash, seat cushions and miscellaneous fittings are taken out and sent to the proper departments for inspection and repair. Either the trucks are removed and temporary trucks are substituted or the truck connections are loosened so that the permanent trucks can be removed readily. The car is then run on the transfer table and sent into the main repair bay, being spotted on one of the two tracks set aside for the purpose of general overhaul.

Two cradles are then placed around the car body. An accompanying illustration shows one of these cradles. In the picture it is resting on a wooden truck which has been designed for holding it so that it can be moved about the shop readily when it is not in position for holding a car in the process of turning. It will be seen that the cradle has two main members at right angles. These are steel forgings shaped roughly to fit the contour of the car. They are permanently joined together at right angles, so that when the bottom member is beneath the body sills the upright member will rest along the side of the car. A removable member serves as a diagonal brace, passing through the windows and connecting with the upright member at a point near the top of the window opening. On the opposite side it is fastened to the end of the horizontal member. A fourth member of the cradle, which is a round steel rod, is placed on the opposite side from the permanent frame. This rod is free to rotate as the car is turned.

When the cradles are placed in position about the body

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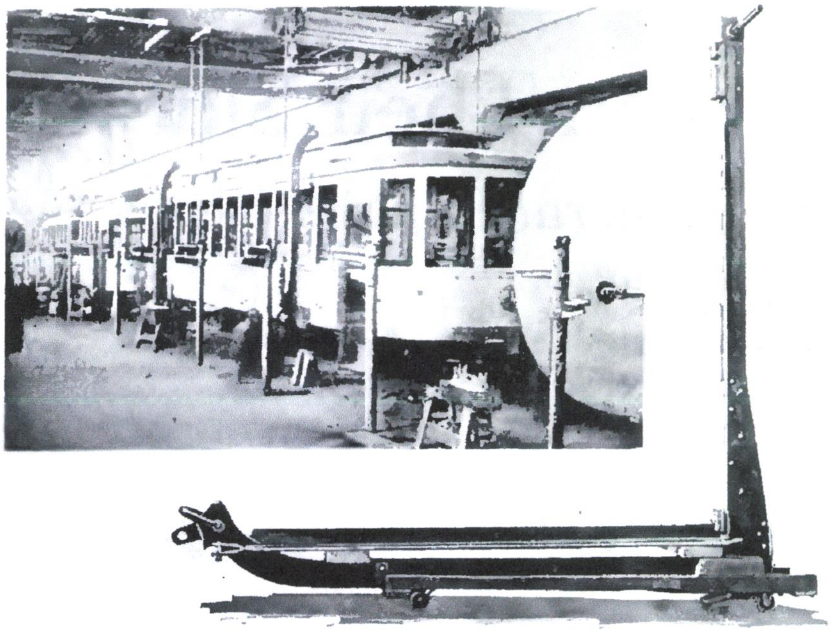

Two of these cradles support the car while it is in process of turning. The insert shows a car which is swinging on the cranes

they are held firmly in place with blocks so that there is no chance of the body shifting as it is turned. With the cradle in place, hooks from the carriages of the overhead traveling crane are attached to the cradle, one set at the bottom next to the sills and the other set at the top of the side frame adjacent to the roof and to the round rod. The body is lifted clear of the trucks, which are run out so that the body is free to move. The differential gear on the crane is then brought into play. This gear consists of a pair of drums with one set of cables reversed so that as one lifts the other lowers an equal amount. The body, swinging free, is then literally rolled over on its side by means of the differential gear. When it has been turned through an angle of 90 deg. horses are placed underneath and the body is lowered onto them. The cradles are then removed and the body is ready for inspection and repair work.

The process of righting the cars is similar to that described for turning them over, the motions merely being reversed. One of the illustrations shows a car which has just been righted and which still is swinging on the crane. The workmen are preparing to put blocking underneath the sills so that the body may be lowered from the crane and the cradle removed.

One of the views shows a row of cars in one of the bays. Those in the foreground have been turned over and work is being done on them. The ones in the rear have already been through the processes that are carried out on the side and have been righted once more, after which the work of reinstalling the parts which were removed takes place.

ADVANTAGES OF TURNING CARS OVER

A number of advantages result from the use of the new process. The principal one is that it is possible for the workmen to get at parts of the car which ordinarily are inaccessible, such as the underframing and the equipment beneath the floor. Inspection of the framing is an easy matter when the car is turned over, and many defects have been discovered which never would be noticed if the inspector had to get into a pit and look upward, depending on a portable lamp for light. Rotted timbers and rusted hangers, air tanks and other metal parts have been discovered. Naturally it is easier to attach or remove equipment which is fastened beneath the car, and wiring can be done with comparative ease.

Another advantage which is seen is that it is possible to paint the under side of the car, getting a good penetration of a protective paint, which was not possible with the old methods. It is felt that this protective painting will result in a much longer life of the framing, the floor and the equipment mounted under the car.

While one gang is working on the equipment beneath the car, another force is able to work inside. This is made possible by laying planks along the side, which now is in the lowest position. Painters can clean and varnish the headlining so as to obtain a better finish in less time and with less fatigue than when the work is done overhead. At the same time attention is given to the roof. While this can be done in the ordinary repair process, it is felt that the workmen are able to do a better job while standing erect and facing the roof than when they must crawl over it, having a relatively insecure footing and being forced to work out toward the edge. This is particularly true with the monitor roof cars used in the Twin Cities.

Mr. Smith estimates that the new method has made a material saving in the cost of doing the work, in addition to the better class of workmanship that is attained.

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Concrete Beam Track Construction Used in Atlanta

IMPROVED practices of track and roadway construction and maintenance have resulted in lower cost and increased reliability of service for the Georgia Power Company, Atlanta, Ga., as described in the brief of that company submitted in the competition for the 1927 Charles A. Coffin Award. There was a reduction in total derailments and split switches from 270 in 1923 to 129 in 1926.

An original type of concrete beam track has been developed. Benefits of using creosoted ties and timbers have been demonstrated and a system for the handling of sand has been inaugurated in which air pressure is substituted for manual labor.

With the concrete beam track a saving of 40 per cent of the concrete and 43 per cent of the rail cost has resulted. The ties and the base of the rails are supported by concrete. The saving in the rail cost is because with the continuous support a light 80-lb. A.S.C.E. section can be used.

After excavating to the subgrade of the paving, the ground is tamped thoroughly or rolled if necessary. After excavation for the beams, the rails and ties are laid. The rails are then bolted together temporarily and spiked with the company's combination tie plates on every tie. The joints are next thermit welded, the track is brought to grade on creosoted pine blocks and the exact year was that of burndowns by foreign lines. These totaled thirteen, which was 34 per cent of the entire number of breaks on our lines.

Upon analysis of the various seasonal peaks it was found that they follow certain trends year after year. A high peak is reached in the summer months due to burndowns, and another comes in December and January.

A matter of interest is that between June 29 and July 17, 1927, four of the seven crystallization breaks occurred. This has been attributed to several causes, such as the weather and expansion of the wire. None of these reasons satisfactorily explains the phenomena.

The board for 1928 has been prepared with only 30 spaces for breaks. Unless unforeseen contingencies arise, such as sleet or wind storms, we expect to stay within this limit. Nevertheless there is plenty of room on the back.

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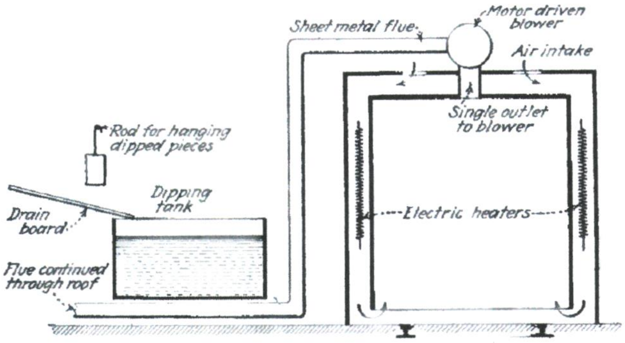
Baking Enamel Used for Many Parts in Twin Cities

ENAMELING of many parts used on electric railway cars, such as window guards, car steps, stanchions, fare boxes and the like, is standard practice of the Twin City Rapid Transit Company. Baking enamels are used, and in almost every instance the parts are dipped, so that all brush work is eliminated. This results in a considerable saving of labor, according to Joseph Gabler, foreman of the paint shop.

As the air temperatures in St. Paul, Minn., in which city the shop is located, are very low in winter some difficulty was experienced with the dipping process, as the enamel would become so stiff that it failed to drain satisfactorily. Accordingly a combination of dipping tank and oven was devised that provided sufficient heat to make the dipping process satisfactory.

The baking oven is 9 ft. wide by 12 ft. long and 7 ft. high. It was made by the Despatch Manufacturing Company of Minneapolis. It is similar to armature baking ovens except that it is somewhat larger. The walls are of heat-insulating material and are double. Air is admitted between the outer and the inner walls, as shown in the line drawing. It passes downward through resistance heaters, controlled by a thermostat, and enters the interior of the oven at the bottom. After passing over the pieces being baked the heated air is exhausted through a motor-driven blower on top of the oven. From here it passes through a rectangular sheet-metal flue, downward and beneath the dipping tank, which is placed close to the oven. After circulating beneath the tank the exhaust air is carried in a flue upward through the roof, so that the fumes from the evaporated solvents are kept out of the shop. This was found particularly necessary in the wintertime, since heating the shop is difficult at best.

Small pieces, such as fare boxes, are suspended from S hooks and dipped by hand. They are then hung to drain on a rod above a drainboard, so that the surplus enamel runs back into the dipping tank. Larger pieces, such as the rear step assembly shown in the illustration, are hung on a hand crane. They may be lowered into the tank, lifted for drainage and then swung out of the way while thus suspended.

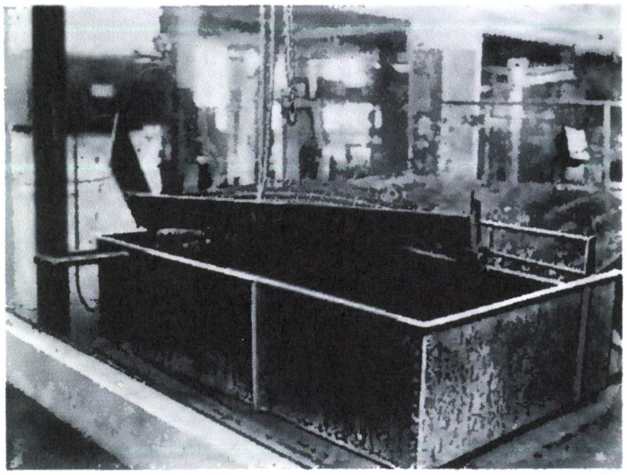


Section of dipping tank and baking oven, showing method of warming tank with waste heat from the oven

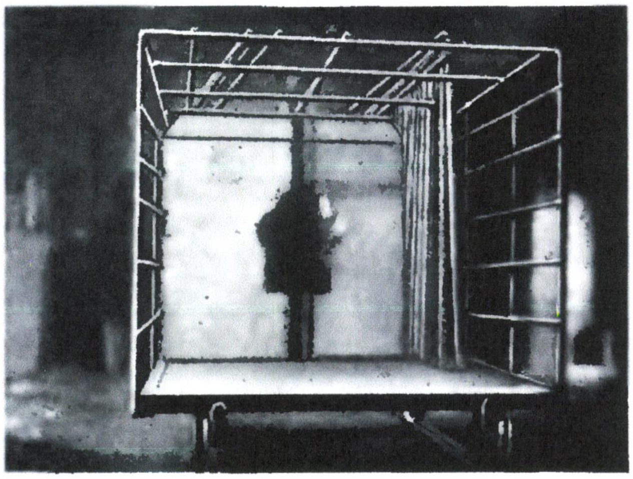
After dipping and draining, all of the parts to be baked are placed on a truck which caries a framework for suspending the small pieces and supporting the large ones. This is shown in another illustration. When the truck is filled it is run through the opened doors of the oven, the doors are closed and the baking takes place.

Enameling is done in a variety of colors, as desired. The blacks are baked at a temperature of 450 to 500 deg F. for about one hour. Lighter colors cannot stand such a high temperature, being baked at 250 to 300 deg. F. for 2½ hours. The parts are then completely dry and ready for use.

The enameling has been found a very satisfactory method of finishing miscellaneous parts. It is durable and readily cleaned. When pieces are dipped in any considerable quantity, as they are in this shop, there is a distinct economy over other finishes ordinarily used.



One of the dipping tanks. An entire rear step assembly is suspended over the tank for draining

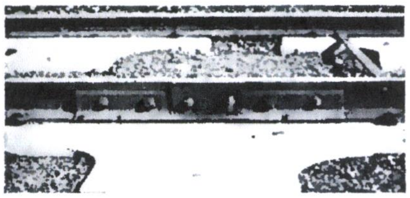


All pieces are placed on this truck for baking, which takes place in the oven at the rear

Maintenance Methods *and* Devices

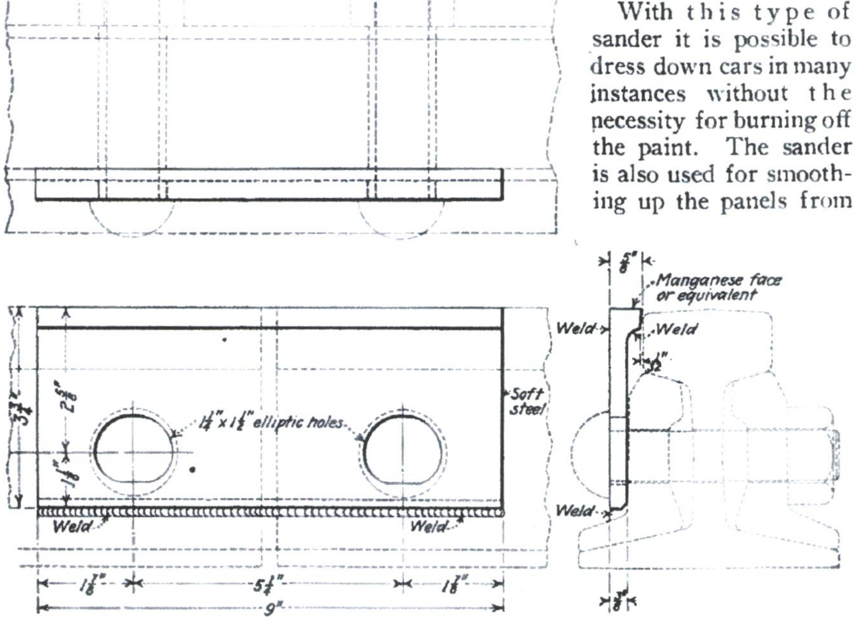
Manganese Bridging Plate Prevents Cupping

MANGANESE plates, which bridge the rail joint plates to give ½-in. bearing surfaces for the wheels, are used by the Pittsburgh, Harmony, Butler & New Castle Railway. These plates have prevented the usual cupping at the rail ends. Each plate is 3¾-in. high and ⅜-in. thick, except for the top face or bearing surface, which is ⅝-in. thick. The manganese reinforcement is secured by two bolts passing through the two inner holes of the joint plates and the end holes of the rail. It is then welded to the bottom flange of the joint plate as shown in the accompanying drawing.



The manganese reinforcing plate is secured by two inner bolts

Where the cupping is advanced, the plate is secured by bolts passing through the second and fourth holes. The welded bridging plates have been used for two years and have proved satisfactory.



The plate is welded to the bottom flange of the joint plate and to the upper part of the rail

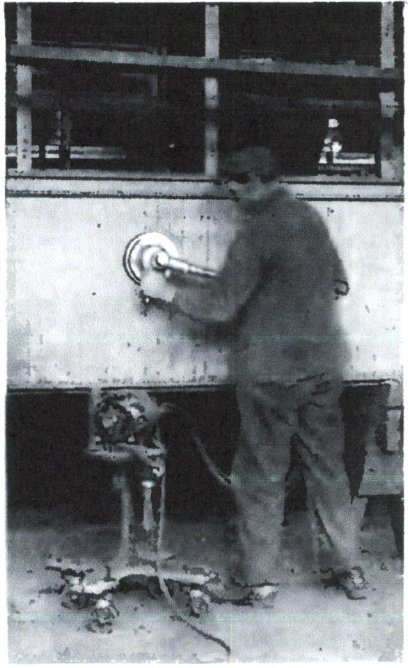
Mr. Fisk says it is "time to retire"—your out of date equipment.

Power Sander Speeds Car Work

WHERE large surfaces, such as the sides of cars, must be prepared for painting, sanding by the use of blocks covered with sandpaper is slow and tiring to the workman. In the shops of the Twin City Rapid Transit Company, St. Paul, Minn., electric sanders are used largely for this work. The accompanying illustration indicates the method of using the sander.

The sandpaper is placed on a circular plate of steel, which is driven by bevel gearing and a flexible shaft from a small motor. The device is mounted on a portable stand. As the workman moves along the car the motor stand is moved readily by a pull on the flexible shaft. Little difficulty is experienced in keeping enough slack so that the rotating sander plate may be manipulated with ease.

With this type of sander it is possible to dress down cars in many instances without the necessity for burning off the paint. The sander is also used for smoothing up the panels from which the paint has been burned off.



This motor-driven sander makes the preparation of the car for painting an easy matter

The sander also can be used wherever sandpapering is required. It does excellent work in smoothing off floors and smoothing off car roofs before the canvas is put on. It is even used on old roofs where the paint has become badly cracked. Where it is necessary to do sandpapering work above the floor level it is an easy matter to suspend the sandpapering machine from an overhead crane or runway so that it can be moved easily.

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Punch Used to Form Switch Iron Handles

LOOPED switch iron handles are formed on a punching machine in the shops of the Chicago Surface Lines. The equipment used was illustrated in the brief submitted by the railway for the Coffin Award. Two strokes of the forming punch are needed to complete the loop, which is but partially formed at the first stroke. One heat is all that is needed in the forming, since the time lost between the first and second strokes is but a short interval, necessary for turning the piece over.

BUILDING, REBUILDING AND DISPOSITION DATES

Equipment Record

1. Printed on reverse (blank)
side of 3×5 index card
(ruled on front side).

2. Form 185 (no date)

3. 3M 11-11

4. 3M 5-13

PCC cars were recorded
on the 5-13 form.

Learn more about the Lakota (Sioux) culture at stjo.org/culture.

NEW BUILDING

	Car	Dates	Under-		Length			
Class	Numbers	Built	Frame	F. Vest	Body	R.Vest	Overall	Width
A-3	607-626	1892	Wood	5'0"	32'6"	5'0"	42'6"	8'9"
	Private Car	1898	Wood	4'10 3/4"	33'4 1/4"	4'9"	43'0"	8'9"
B-3	737-788	1898-1899	Wood	5'0 1/4"	33'2 1/8"	5'0 1/4"	43'2 5/8"	8'8 3/4"
B-3	797-867	1899-1901	Wood	5'0 1/4"	33'2 1/8"	5'0 1/4"	43'2 5/8"	8'8 3/4"
C-3	868-899	1901	Wood	4'11"	27'9"	4'11"	37'7"	8'4 3/4"
B-3	900-949	1902	Wood	5'0 1/4"	33'2 1/8"	5'0 1/4"	43'2 5/8"	8'8 3/4"
B-5	950-951	1903	Wood	5'0 1/4"	33'2 1/8"	5'0 1/4"	43'2 5/8"	8'8 3/4"
D-7	952-991	1903	Wood	6'0"	33'2 1/8"	6'0"	45'2 1/8"	8'8 3/4"
D-4	992-1041	1904	Wd&Stl	6'0"	33'2 1/8"	6'0"	45'2 1/8"	8'8 3/4"
E-4	1042-1111	1904-1905	Wd&Stl	6'0"	33'2 1/8"	6'0"	45'2 1/8"	8'8 3/4"
F-4	1112-1144	1905	Steel	6'0 1/4"	33'9 1/8"	6'0 1/4"	45'9 5/8"	8'8 1/2"
G-6	1145-1220	1906	Steel	6'6 1/4"	33'9 1/8"	6'6 1/4"	46'9 5/8"	9'2 1/2"
H-6	1221-1290	1907	Steel	6'6 1/4"	33'6 5/8"	6'6 1/4"	46'7 1/8"	9'2 1/2"
I-1	1291-1309	1908	Steel	6'6 1/4"	33'6 5/8"	6'6 1/4"	46'7 1/8"	9'2 1/2"
J-2	1310-1359	1908-1909	Steel	6'6 1/4"	33'6 5/8"	6'7 1/8"	46'8"	9'2 1/2"
K-2	1360-1379	1909	Steel	6'6 1/4"	33'6 5/8"	6'7 1/8"	46'8"	9'1"
K-8	1380-1485	1910-1911	Steel	6'6 1/4"	33'6 5/8"	6'7 1/8"	46'8"	9'1"
L-8	1482-1855	1912-1917	Steel	6'5 1/4"	33'7 3/4"	6'7"	46'8"	9'1"
M-9	2000-2001	1916	Steel				46'0 1/4"	9'0"
N-9	2002-2003	1921	Steel				46'0"	9'0"
P-10	1-4	1925	Steel				35'10 3/4"	9'0"
O-11	2004-2005	1926	Steel				45'6"	9'0"
P-11	2006-2030	1927-1928	Duralumin				45'6"	9'0"

UNDERFRAME

Straight Front and Rear Platform: 607-626,Private Car,737-788,1-4

Straight Front and Drop Rear Platform: 797-991

Rebuilt with Drop Rear Platform 1904-1905: 737-788

Drop Front and Rear Platform: 992-1855,2000-2030

MOTORMAN'S CAB DOOR

Hinged, Narrow: 607-626,Private Car,737-788,797-951;

Hinged, Wide: 952-1485; 1450 experimental front exit, retained its sliding door.

Sliding: 1482-1855,2000.

REAR STEPS AND GATES (the Class Numeral)

3	One pair opening 42" each
	Rebuilt to 5 1904-1905: 737-788,817-831,868-899,900-904,942-949
5	Two pair opening 32" each
4 and 7	Two pair opening 33" each
6 (G)	Two pair opening 36" each.
6 (H)	Two pair opening 35" each.
1	Two pair opening 35" each.
2 and 8	Three pair opening 28" each

BULKHEAD DOORS

Front	None: 607-626,Private Car, 737-788,797-949
	Single Sliding (to Gate Side): 950-1144; Single Slding (to Pole Side) 1145-1855
Rear	Single Sliding (to Pole Side): 607-626,Private Car,737-788,797-949.
	Double Slding: 950-1855.

AVERY® POLY VU

REBUILT CAR MEASUREMENTS

Trailers 200-225

Length: each platform 6'0", body 33'2 1/8", overall 45'2 1/8". Width 8'8 3/4".

Front-Exit Cars 1254,1266-1328

Length: front platform 6'2¼", body 33'6 5/8", rear platform 6'3 1/8"; overall 46'0". Width 9'2½".

Double-End Car 1230

Length: each platform 6'4¼", body 33'6 5/8", overall 46'3 1/8". Width 9'2½".

Double-End Car 1129

Length: each platform 6'0", body 33'9", overall 45'9". Width 8'6½".

One/Two Man Cars

81 cars: 1166-1201,1203,1205-1211,1213-1229,1233,1235-1253. Length: each platform 6'3¼", body 33'6 5/8", overall 46'1 1/8". Width 9'2½".

36 cars: 1293-1328. Length: front platform 6'2¼", body 33'6 5/8", rear platform 6'3 1/8", overall 46'0". Width 9'2½".

10 cars: 1465-1470,1473,1475,1479,1480. Length: front platform 6'5¼", body 33'7 3/4", rear platform 6'7", overall 46'8". Width 9'1".

400 cars: 1382,1384-1398,1402,1408,1415,1417,1420,1424,1425,1430,1433,1437,1440,1441,1446, 1448-1451,1454,1462,1464,1482,1485,1487-1492,1494-1513,1515-1541,1543-1546,1548-1554,1556-1562, 1564-1854. Length: each platform 6'3¼", body 33'6 5/8", overall 46'1 1/8". Width 9'1".

SERVICE EQUIPMENT MEASUREMENTS

Car Numbers	Type	Under-frame	Length Overall	Length Cab/Body	Width	Height-Rail to Trolley Board	Pltfms
3-5,72	Wire Car	Wood	37'6"	10'0 1/8"	8'8"	10'11¼"	
7-10	Work Car	Steel	36'0"	4'0"	8'8"	10'9¼"	
11-19	Work Car	Steel	37'2½"	4'0"	8'8"	10'9¼"	
20	Locomotive	Steel	27'0"	7'0"	9'0 5/16"	11'3"	
21	Wrecker-Crane	Steel	38'5"	4'0"	9'1 3/4"	11'6"	
22	Snow Plow	Steel	36'8"	27'2"	8'5½"	10'7¼"	
23-24	Snow Plow-Sweeper	Steel	44'2"	24'10"	9'3"	10'7¼"	
25	Snow Plow	Wood	32'4"	24'3"	8'3"	10'9"	
26-28	Shifter	Wood	20'4½"	12'8 3/4"	7'3 1/8"	9'8¼"	
29-32	Snow Plow-Sweeper	Steel	44'2"	24'10"	9'3"	10'7¼"	
33	UWC Work Car	Steel	37'0"	10'0 1/8"	8'8"	10'11¼"	
34	Baggage	Steel	45'1½"	39'6¼"	9'2 3/4"	11'4"	2'9 5/8"
35	Rail Grinder	Steel	24'0½"	22'6"	9'0"	10'9"	
36-37	Snow Plow	Steel	36'8"	27'2"	8'5½"	10'7¼"	
38	Snow Plow	Steel	34-0½"	27'2"	8'5½"	10'7¼"	
39,40	Rail Grinder	Steel	15'7½"		7'4"	10'11"	
43-45	Sand Car	Steel	40'0"		8'10 1/8"	10'11½"	
46-48	Work Car	Steel	37'2½"	4'0"	8'0"	10'9¼"	
49	Refuse Car	Steel	37'2½"	6'4"	8'0 1/16"	10'7 5/8"	
50	Crane Car	Steel	43'10"	4'0"	8'11½"	11'2½"	
51-56	Work Car	Steel	37'2½"	4'0"	8'0"	10'9¼"	
57,60,73	Shovel	Steel	27'0"	12'6"	8'6"	11'9"	
58,61	Cupola Car	Steel	37'0"	10'0"	8'2"	10'3"	
59	Sprinkler	Steel	35'4"	5'4½" each	8'0¼"	10'4"	
62-69	Work Car	Steel	37'2½"	4'0"	8'0"	10'9¼"	
70	Sand Blast	Wood	11'0"		6'6"	10'10"	
74	Yard Crane	Steel	48'10"		10'10"	8'0"	
75-82	Snow Plow	Steel	37'2"	27'3"	8'8"	11'0"	
83	Crane Car	Steel	44'0"	?	8'0"	11'5"	
94	Shovel	Steel	31'6"	13'0"	8'8"	11'0"	
A13,A14	Work Car	Wood	25'6½"	6'7"	7'8½"	10'9½"	
UofM	Switch Car	Steel	37'0"	18'6½"	9'0½"	11'5"	
StPSERy	Work/Plow	Steel	37'0" work 40'0" plow	18'6½"	9'6"	11'5"	

CHANGE IN CAR NUMBERS

Old Number		Changed to New Number	
Motor Car	Trailer	Motor Car	Trailer
1590 —	1590-A	1625	225
1599	758	1601	201
1600	745	1600	200
1601	- -	1599	- -
1602	- -	1590	- -
1603	746	1603	203
1604	- -	1626	- -
1605	748	1605	205
1606	- -	1630	- -
1607	739	1607	207
1608	- -	1633	- -
1609	- -	1640	- -
1610	- -	1642	- -
1611	- -	1644	- -
1612	- -	1650	- -
1613	- -	1655	- -
1614	738	1614	214
1615	737	1615	215
1616	- -	1669	- -
1617	753	1617	217
1618	- -	1670	- -
1619	- -	1671	- -
1620	756	1620	220
1621	- -	1699	- -
1622	759	1622	222
1623	- -	1766	- -
1624	- -	1701	- -
1625	740	1602	202
1626	744	1604	204
1630	742	1606	206
1633	743	1608	208
1640	750	1609	209
1642	741	1610	210
1644	747	1611	211
1650	751	1612	212
1655	749	1613	213
1669	752	1616	216
1670	754	1618	218
1671	755	1619	219
1699	757	1621	221
1701	761	1624	224
1766	760	1623	223

737
to
761

200
to
224

n

n

10-18-21

1600-1625 RENUMBERING KEY

1590II	see	1602I
1599II	see	1601I
1601II	see	1599I
1602II	see	1625I
1604II	see	1626I
1606II	see	1630I
1608II	see	1633I
1609II	see	1640I
1610II	see	1642I
1611II	see	1644I
1612II	see	1650I
1613II	see	1655I
1616II	see	1669I
1618II	see	1670I
1619II	see	1671I
1621II	see	1699I
1623II	see	1766I
1624II	see	1701I
1625II	see	1590I
1626II	see	1604I
1630II	see	1606I
1633II	see	1608I
1640II	see	1609I
1642II	see	1610I
1644II	see	1611I
1650II	see	1612I
1655II	see	1613I
1669II	see	1616I
1670II	see	1618I
1671II	see	1619I
1699II	see	1621I
1701II	see	1624I
1766II	see	1623I

* Trailer Rebuilt Date
# Repaint Date

On those cars with two Rebuilt FE dates, the earlier date is for adding the front exit doors, while the later date is for modifying the rear platform for trailer operation.

TRAILER TRAIN RENUMBERINGS

1600 and 745 became 1600-200
1599 and 758 became 1601-201
1625 and 740 became 1602-202
1603 and 746 became 1603-203
1626 and 744 became 1604-204
1605 and 748 became 1605-205
1630 and 742 became 1606-206
1607 and 739 became 1607-207
1633 and 743 became 1608-208
1640 and 750 became 1609-209
1642 and 741 became 1610-210
1644 and 747 became 1611-211
1650 and 751 became 1612-212
1655 and 749 became 1613-213
1614 and 738 became 1614-214
1615 and 737 became 1615-215
1669 and 752 became 1616-216
1617 and 753 became 1617-217
1670 and 754 became 1618-218
1671 and 755 became 1619-219
1620 and 756 became 1620-220
1699 and 757 became 1621-221
1622 and 759 became 1622-222
1766 and 760 became 1623-223
1701 and 761 became 1624-224
1590 and 952 became 1625-225

ABBREVIATIONS

Built and Rebuilt Dates are from two sources, Record Cards (RC), and Data Sheets (DS). Often there were discrepancies between the two dates. In those situations the RC date is listed first followed by the DS date. Depending upon space needs several forms of printing were used to show the DS date: (xx-xx), /xx-xx, or /xx. (Lightweight cars 2006-2030:the DS dates were used as the RC dates were obviously incorrect based on the dates of assignment to the car stations.)

Built

DDo	Double Deck (open upper deck).
DDe	Double Deck (enclosed upper deck).

Rebuilt FE

FE	Front Exit Doors

Rebuilt OM

OM	One/Two Man Operation

Rebuilt-Other

DE	Double End
SE	Single End
RG	Rail Grinder
SC	Supply Car
TR	Trailer

Disposition

CS	Car Sold (Complete)	AEC	Aurora Elgin & Chicago Ry.
		SMR	Seattle Municipal Railway
		TMB	Tacoma Municipal Belt Line Ry.
		DSR	Duluth Street Railway
		CCC	Cripple Creek Coal Co.
		NSP	Northern States Power Co.
		AIS	American Iron & Supply Co.
CD	Car Donated (Complete)	STM	Seashore Trolley Museum
		MTM	Minnesota Transportation Museum
BS	Body Sold	WER	Winnipeg Electric Railway
		TSC	Transportation Sales Company
		DPM	D. P. Mikkelson
		MRW	Mr. Weisner
		UNK	Unknown
BT	Body to Track Dept. Storage Shed, Snelling Yard		
DF	Destroyed by Fire		
AD	Dismantled and Burned due to Accident Damage (Date of Accident)		
SS	Sold for Scrap to Paper Calmenson & Company		
DB	Dismantled and Burned		
BG	Body Given Away		

Car #	Built	Rebuilt FE	Rebuilt OM	Steel Pltd.	Rebuilt-Other	Disposition
737	1898 (9-11)				TR 215 8-26-21	SS 6-29-36
738	1898 (9-12)				TR 214 8-26-21	SS 7-01-36
739	9-14-98				TR 207 7-30-21	SS 7-01-36
740	9-13-98				TR 202 7-14-21	SS 6-24-36
741	9-17-98				TR 210 8-13-21	SS 6-26-36
742	9-23-98				TR 206 7-30-21	SS 6-26-36
743	9-20-98				TR 208 8-13-21	SS 6-29-36
744	9-23-98				TR 204 7-28-21	SS 6-26-36
745	9-30-98				TR 200 7-12-21	SS 6-26-36
746	9-28-98				TR 203 7-16-21	SS 6-24-36
747	9-28-98				TR 211 8-13-21	SS 6-29-36
748	10-01-98				TR 205 7-29-21	SS 6-26-36
749	10-19-98				TR 213 8-26-21	SS 7-06-36
750	10-20-98				TR 209 8-13-21	SS 6-29-36
751	10-26-98				TR 212 8-26-21	SS 7-01-36
752	10-31-98				TR 216 9-26-21	SS 6-29-36
753	11-18-98				TR 217 9-26-21	SS 6-26-36
754	10-31-98 (11-29)				TR 218 9-10-21	SS 7-01-36
755	12-09-98				TR 219 9-25-21	SS 7-01-36
756	12-16-98				TR 220 9-08-21	SS 7-01-36
757	12-21-98				TR 221 9-10-21	SS 6-29-36
758	12-23-98				TR 201 7-13-21	SS 6-24-36
759	1-01-99				TR 222 9-24-21	SS 6-29-36
760	1-01-99				TR 223 9-25-21	SS 6-24-36
761	1-01-99				TR 224 9-10-21	SS 7-01-36
762	1-01-99				SC 2 11-29-22	DB 12- -36
763	1-01-99					CS 10-01-18 SMR
764	1-01-99					SS 6-08-34
765	1-01-99					CS 10-01-18 SMR
766	1-01-99					CS 7-10-18 TMB
767	1-01-99					CS 7-10-18 TMB
768	1-01-99					CS 10-01-18 SMR
769	1-01-99					CS 10-01-18 SMR
770	1-01-99					CS 10-01-18 SMR
771	1-01-99					CS 10-01-18 SMR
772	1-01-99					CS 10-01-18 SMR
773	6-21-99					CS 10-01-18 SMR
774	6-21-99					CS 10-01-18 SMR
775	6-28-99					CS 10-01-18 SMR
776	6-29-99					CS 7-10-18 TMB
777	7-28-99					CS 10-01-18 SMR
778	7-28-99					CS 7-10-18 TMB
779	8-16-99					CS 10-01-18 SMR
780	8-17-99					SS 5-16-34
781	8-17-99 (8-18)					SS 6-19-34
782	8-18-99					CS 5-29-13 AEC
783	8-29-99					CS 5-29-13 AEC
784	8-31-99					CS 5-29-13 AEC
785	9-02-99					CS 5-29-13 AEC
786	9-03-99					CS 10-01-18 SMR
787	9-04-99					CS 7-10-18 TMB
788	9-04-99					CS 10-01-18 SMR
797	9-04-99					CS 10-01-18 SMR

Car #	Built	Rebuilt FE	Rebuilt OM	Steel Pltd.	Rebuilt-Other	Disposition
798	7-07-00					CS 10-01-18 SMR
799	7-11-00					CS 10-01-18 SMR
800	6-29-00					SS 5-14-34
801	7-10-00					SS 5-16-34
802	8-04-00					SS 6-25-34
803	7-07-00					CS 10-01-18 SMR
804	7-07-00					CS 10-01-18 SMR
805	7-14-00					CS 10-01-18 SMR
806	7-14-00					SS 6-12-34
807	6-27-00					CS 10-01-18 SMR
808	6-27-00					CS 10-01-18 SMR
809	6-26-00					SS 6-07-34
810	6-23-00					CS 10-01-18 SMR
811	6-28-00					CS 10-01-18 SMR
812	6-22-00					CS 10-01-18 SMR
813	6-23-00				DE 8- -12	DB 10- -41
814	8-20-00					SS 5-14-34
815	8-20-00	(8-23)				SS 6-05-34
816	8-21-00					SS 6-07-34
817	8-04-00					CS 7-10-18 TMB
818	8-05-00					CS 7-10-18 TMB
819	8-10-00					CS 7-10-18 TMB
820	8-03-00					CS 5-25-18 TMB
821	8-03-00					CS 5-25-18 TMB
822	7-17-00					CS 5-25-18 TMB
823	7-28-00					CS 5-25-18 TMB
824	7-28-00					CS 5-25-18 TMB
825	10-01-00					CS 7-10-18 TMB
826	7-03-00					CS 5-25-18 TMB
827	7-03-00					CS 5-25-18 TMB
828	7-03-00					CS 5-25-18 TMB
829	7-13-00					CS 7-10-18 TMB
830	7-03-00					CS 5-25-18 TMB
831	7-03-00					CS 5-25-18 TMB
832	8-18-00					BS 7-01-20 WER

833-844 built Aug&Sep-00. Sold to DSR 8-27-00 151-162. First car received by DSR 1-3-01.

833II	4-19-01					BS 7-01-20 WER
834II	4-19-01	(4-12)				BS 7-01-20 WER
835II	4-19-01					BS 7-01-20 WER
836II	4-20-01					BS 7-01-20 WER
837II	4-05-01	(4-03)				BS 7-01-20 WER
838II	4-09-01					BS 7-01-20 WER
839II	4-01-01					BS 7-01-20 WER
840II	4-13-01					BS 7-01-20 WER
841II	4-19-01					BS 7-01-20 WER
842II	4-08-01					BS 8-15-20 WER
843II	4-09-01					SS 5-31-34
844II	4-06-01					BS 8-15-20 WER
845	9-12-00					BS 8-15-20 WER
846	9-18-00					BS 8-15-20 WER
847	9-25-00				DE 7- -20	DB 10- -41
848	9-29-00					BS 8-15-20 WER

Car #	Built	Rebuilt FE	Rebuilt OM	Steel Pltd.	Rebuilt-Other	Disposition
849	8-25-00					BS 8-15-20 WER
850	8-30-00					BS 8-15-20 WER
851	8-30-00					BS 8-15-20 WER
852	8-28-00					BS 8-15-20 WER
853	8-31-00					BS 8-15-20 WER
854	9-01-00					SS 7-02-34
855	9-13-00					SS 7-02-34
856	10-06-00					SS 6-28-34
857	10-19-00					SS 7-02-34
858	10-22-00					SS 7-06-34
859	10- -00					AD 5-08-03
860	4-08-01					DF 8-17-25
861	4-12-01					DF 8-17-25
862	4-02-01					DF 8-17-25
863	4-02-01					DF 8-17-25
864	4-03-01					DF 8-17-25
865	4-04-01					DF 8-17-25
866	4-04-01					SS 5-16-34
867	4-12-01					SS 5-16-34
868	2-02-01					CS 12-19-12 DSR 255
869	5-28-01					CS 12-19-12 DSR 256
870	5-24-01					SS 6-15-34
871	5-31-01					DF 8-17-25
872	5-29-01					DF 8-17-25
873	5-29-01					DF 8-17-25
874	6-01-01					DF 8-17-25
875	5-24-01				DE 4-05-16	DB 10- -41
876	6-04-01				DE 6- -16	DB 10- -41
877	6-03-01					DF 8-17-25
878	5-25-01					SS 5-14-34
879	5-28-01					DF 8-17-25
880	6-05-01					SS 6-26-34
881	6-07-01					SS 6-28-34
882	6-07-01 (6-08)					SS 6-28-34
883	6-11-01					SS 6-28-34
884	6-12-01					SS 6-08-34
885	6-14-01					SS 6-21-34
886	6-19-01					SS 6-25-34
887	6-22-01					SS 6-19-34
888	6-26-01					SS 6-23-34
889	8-02-01					SS 6-13-34
890	7-29-01					SS 6-29-34
891	8-08-01					SS 5-14-34
892	8-06-01					SS 6-15-34
893	8-09-01					SS 6-19-34
894	8-12-01					SS 6-12-34
895	8-22-01 (8-20)					SS 6-08-34
896	8-22-01				DE 3-19/23-12	SS 6-10-36
897	8-27-01				DE 7-01-10	SS 6-06-36
898	9-03-01				DE 7-01-10	SS 10- -41
899	9-07-01				DE 7-01-10	CS 10-01-18 CCC
900	6-16-02					SS 5-16-34
901	6-12-02					SS 7-06-34
902	6-10-02					SS 5-16-34

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Car #	Built	Rebuilt FE	Rebuilt OM	Steel Pltd.	Rebuilt-Other	Disposition
903	6-10-02	(6-19)				SS 5-16-34
904	6-10-02	(6-18)				SS 5-16-34
905	6-17-02					SS 6-07-34
906	11-04-02					SS 6-15-34
907	10-30-02					SS 6-12-34
908	11-03-02					SS 6-15-34
909	8-06-02					SS 5-14-34
910	8-15-02					SS 6-25-34
911	10-24-02					SS 6-25-34
912	10-27-02					SS 6-19-34
913	10-22-02					SS 6-25-34
914	10-25-02					SS 6-12-34
915	5-23-02					SS 6-21-34
916	5-23-02					SS 6-19-34
917	6-05-02					SS 6-07-34
918	6-06-02					SS 6-23-34
919	6-06-02					SS 6-23-34
920	6-07-02					SS 6-22-34
921	5-31-02					SS 6-13-34
922	6-09-02					SS 6-12-34
923	6-26-02	(5-26)				SS 6-05-34
924	5-28-02					SS 6-05-34
925	7-14-02					SS 6-05-34
926	8-01-02					SS 5-16-34
927	9-16-02					SS 6-05-34
928	9-16-02					SS 7-02-34
929	11-27-02					SS 6-28-34
930	11-29-02					SS 6-28-34
931	11-14-02					SS 6-26-34
932	11-28-02					SS 7-06-34
933	9-13-02					SS 7-06-34
934	11-21-02					SS 6-21-34
935	11-18-02	(11-28)				SS 6-16-34
936	9-22-02					SS 6-21-34
937	9-04-02					SS 7-02-34
938	9-23-02					SS 6-13-34
939	11-06-02					SS 6-13-34
940	11-24-02					SS 6-26-34
941	9-08-02					SS 6-26-34
942	10-13-02					SS 7-06-34
943	10-09-02					SS 6-26-34
944	10-09-02					SS 6-25-34
945	10-18-02					SS 6-26-34
946	9-27-02	(10-27)				SS 7-02-34
947	9-27-02	(10-18)				DF 8-17-25
948	9-18-02					SS 5-14-34
949	9-19-02					SS 5-14-34
950	4-14-03					SS 5-14-34
951	5-09-03					DF 8-17-25
952	5-12-03				TR [redacted] 1920; FE 4 Re#1590A 10-11-20; Re# 225 7-07-21	AD 2-28-35 (11-19-33)
953	5-07-03					SS 6-07-34
954	5-07-03					SS 6-05-34

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Car #	Built	Rebuilt FE	Rebuilt OM	Steel Pltd.	Rebuilt-Other	Disposition
955	5-16-03	(5-08)				SS 6-05-34
956	5-08-03					SS 5-16-34
957	5-08-03	(5-12)				SS 6-05-34
958	5-15-03					SS 5-31-34
959	5-15-03					SS 5-31-34
960	5-13-03					SS 5-14-34
961	5-13-03					SS 5-13-36
962	5-29-03					SS 5-11-36
963	6-03-03					SS 5-11-36
964	5-29-03					SS 5-11-36
965	5-22-03					SS 5-15-36
966	5-20-03					SS 5-15-36
967	5-20-03					SS 5-11-36
968	5-20-03					SS 5-08-36
969	5-26-03					SS 5-11-36
970	5-25-03					SS 5-11-36
971	5-23-03					SS 5-15-36
972	5-28-03					SS 5-05-36
973	5-28-03					SS 5-05-36
974	5-22-03					SS 5-08-36
975	7-20-03					SS 5-05-36
976	6-26-03					SS 6-12-36
977	7-06-03					SS 7-11-36
978	7-06-03					SS 7-06-36
979	7-07-03					SS 7-06-36
980	7-13-03					SS 6-19-36
981	8-21-03	(8-12)				SS 6-22-36
982	7-22-03					SS 6-22-36
983	8-04-03					SS 7-06-36
984	8-07-03					SS 6-16-36
985	8-19-03					SS 6-22-36
986	8-20-03					SS 6-19-36
987	8-25-03					SS 6-22-36
988	9-16-03					SS 7-11-36
989	8-18-03					SS 6-16-36
990	9-17-03					SS 7-16-36
991	9-26-03					SS 6-22-36
992	6-30-04				DE 10-02-12 SE 12-08-14	SS 6-16-36
993	6-29-04				DE 10-02-12 SE 12-14-14	SS 6-22-36
994	6-29-04					SS 6-16-36
995	6-29-04	(6-08)				SS 6-16-36
996	5-29-04					SS 7-08-36
997	6-08-04					SS 7-16-36
998	5-17-04					SS 5-22-36
999	5-09-04					SS 5-22-36
1000	6-16-04					SS 6-03-36
1001	5-17-04					SS 7-16-36
1002	5-19-04					SS 6-03-36
1003	5-07-04					SS 6-03-36
1004	6-06-04					SS 7-16-36
1005	6-14-04					SS 7-16-36
1006	4-29-04					DF 11-19-33

Car #	Built	Rebuilt FE	Rebuilt OM	Steel Pltd.	Rebuilt-Other	Disposition
1007	5-02-04					SS 5-19-36
1008	5-04-04					SS 5-18-36
1009	5-06-04					SS 5-21-36
1010	4-29-04	(5-28)				SS 6-10-36
1011	4-29-04	(4-23)				SS 5-19-36
1012	5-09-04					SS 6-03-36
1013	5-10-04					SS 6-02-36
1014	5-11-04					SS 5-19-36
1015	5-12-04					SS 5-21-36
1016	5-05-04					SS 5-21-36
1017	5-04-04					SS 5-18-36
1018	5-13-04					SS 5-21-36
1019	5-13-04					SS 5-21-36
1020	5-20-04					SS 6-17-36
1021	5-26-04					SS 6-12-36
1022	5-26-04	(5-24)				SS 5-19-36
1023	5-26-04					SS 6-17-36
1024	5-21-04					SS 6-17-36
1025	5-24-04					SS 7-08-36
1026	5-20-04					SS 6-19-36
1027	6-01-04					SS 7-08-36
1028	6-01-04					SS 6-06-36
1029	5-27-04					SS 6-06-36
1030	6-02-04					SS 6-17-36
1031	6-15-04					SS 7-03-36
1032	6-15-04					SS 6-12-36
1033	6-15-04					SS 6-12-36
1034	6-14-04					SS 6-12-36
1035	6-16-04					SS 5-18-36
1036	6-15-04	(6-18)				SS 5-26-36
1037	6-30-04					SS 5-29-36
1038	6-17-04					SS 7-08-36
1039	6-30-04					SS 5-23-36
1040	6-30-04					SS 7-08-36
1041	6-17-04					SS 7-11-36
1042	2-14-05					SS 6-06-36
1043I	2-13-05					CS 2-23-05 DSR 178
1043II	3-18-05					SS 6-03-36
1044	2-01-05					SS 6-06-36
1045	1-31-05					SS 6-19-36
1046	2-11-05					SS 6-02-36
1047	2-02-05					SS 5-28-36
1048	2-04-05					SS 6-10-36
1049	2-03-05					SS 5-23-36
1050	1-30-05					SS 5-28-36
1051	2-10-05					SS 6-02-36
1052	2-09-05					SS 6-02-36
1053	2-06-05					SS 6-10-36
1054	2-08-05					SS 5-26-36
1055	2-10-05					SS 5-26-36
1056	2-08-05					SS 6-06-36
1057	11-20-04					SS 5-26-36
1058	2-07-05					SS 6-06-36
1059	11-20-04					SS 5-23-36

Car #	Built	Rebuilt FE	Rebuilt OM	Steel Pltd.	Rebuilt-Other	Disposition
1060	11-20-04					SS 6-24-36
1061	11-28-04					SS 7-08-36
1062	11-24-04					SS 6-12-36
1063	11-25-04					SS 6-16-36
1064	11-20-04					SS 6-10-36
1065	11-28-04					SS 7-08-36
1066	12-22-04					SS 6-03-36
1067	12-21-04					SS 7-11-36
1068	12-22-04					SS 5-08-36
1069	12-23-04					SS 5-05-36
1070	12-20-04					SS 5-26-36
1071	12-29-04					SS 6-06-36
1072	12-29-04					SS 5-26-36
1073	12-30-04					SS 5-23-36
1074	12-29-04					SS 6-10-36
1075	12-30-04					SS 5-23-36
1076	12-30-04					SS 5-28-36
1077	1-23-05					SS 6-02-36
1078	1-26-05					SS 7-08-36
1079	1-29-05					SS 5-23-36
1080	2-23-05					SS 6-06-36
1081	3-08-05					SS 6-02-36
1082	3-07-05					SS 5-23-36
1083	3-07-05					SS 5-19-36
1084	3-07-05					SS 7-11-36
1085	3-09-05					SS 5-11-36
1086	3-11-05					SS 5-11-36
1087	3-14-05					SS 5-13-36
1088	3-13-05					SS 5-13-36
1089	3-15-05					SS 5-13-36
1090	3-17-05					SS 5-18-36
1091	5-08-05					SS 5-15-36
1092	7-01-04	(DDo experimental 1904-06)				SS 5-18-36
1093	5-06-05					SS 5-15-36
1094	5-08-05					SS 5-13-36
1095	5-20-05					SS 5-11-36
1096	5-12-05					SS 5-11-36
1097	5-19-05					SS 5-15-36
1098	5-15-05					SS 5-08-36
1099	5-17-05					SS 5-13-36
1100	5-18-05					SS 7-08-36
1101	5-20-05					SS 7-08-36
1102	5-22-05					SS 6-12-36
1103	5-26-05					SS 7-08-36
1104	5-29-05					SS 6-19-36
1105	6-02-05					SS 7-06-36
1106	6-02-05					SS 6-24-36
1107	6-05-05					SS 7-11-36
1108	6-06-05					CS 6-15-06 DSR 180
1109	6-08-05					CS 6-15-06 DSR 181
1110	6-10-05					CS 6-15-06 DSR 182
1111	6-15-05					CS 8-24-05 DSR 179
1112	8-20-05					DB 6- -38
1113	8-21-05					DB 6- -38

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Car #	Built	Rebuilt FE	Rebuilt OM	Steel Pltd.	Rebuilt-Other	Disposition
1114	8-22-05					AD 4-11-20
1115	8-23-05					DB 6- -38
1116	8-23-05					DB 6- -38
1117	8-23-05					DB 6- -38
1118	8-23-05					DB 6- -38
1119	8-23-05					DB 6- -38
1120	8-24-05					DB 6- -38
1121	8-25-05					DB 6- -38
1122	8-26-05					DB 6- -38
1123	8-28-05					DB 6- -38
1124	9-03-05		9-16-32			DB 4- -39
1125	9-04-05		9-16-32			DB 4- -39
1126	9-04-05		9-16-32			DB 4- -39
1127	9-04-05		9-16-32			DB 4- -39
1128	9-04-05		9-16-32			DB 4- -39
1129	9-04-05				DE 9-07-32	DB 8-26-47
1130	9-03-05	(9-05)				DB 4- -39
1131	9-05-05		9-16-32			DB 4- -39
1132	9-05-05					DB 4- -39
1133	9-05-05					DB 4- -39
1134	9-05-05				SC 95 10- -36	DB 8-26-47
1135	9-05-05					DB 6- -38
1136	10-21-05					DB 12-10-52
1137	10-21-05					DB 4- -39
1138	10-28-05					DB 4- -39
1139	11-07-05					DB 6- -38
1140	10-27-05					DB 4- -39
1141	10-28-05					DB 4- -39
1142	11-08-05					DB 4- -39
1143	11-25-05					DB 4- -39
1144	11-25-05					DB 4- -39
1145	5-25-06	(DDe experimental 1906)				DB 6- -38
1146	6-22-06	4-27-38				DB 10- -41
1147	6-22-06	3-08-38				DB 10- -41
1148	6-01-06	1-31-38				DB 10- -41
1149	6-02-06	1-03-38				DB 10- -41
1150	6-13-06					DB 6- -38
1151	6-14-06					DB 6- -38
1152	5-21-06					DB 6- -38
1153	6-24-06					DB 6- -38
1154	6-08-06					DB 6- -38
1155	6-09-06					DB 6- -38
1156	6-09-06					DB 6- -38
1157	5-24-06					DB 6- -38
1158	6-18-06					DB 6- -38
1159	6-15-06					DB 6- -38
1160	6-16-06	(DDo experimental 1906)				DB 6- -38
1161	6-16-06					DB 6- -38
1162	6-19-06					DB 6- -38
1163	6-29-06					DB 6- -38
1164	7-01-06					DB 4- -39
1165	7-03-06					DB 4- -39

Car #	Built	Rebuilt FE	Rebuilt OM	Steel Pltd.	Rebuilt-Other	Disposition
1166	8-07-06		1-16-37	5-03-47		DB 8-05-54
1167	8-14-06		2-01-37			BS 5-29-54 TSC
1168	8-03-06		2-01-37			BS 3-08-54 TSC
1169	7-18-06		1-16-37			DB 7-07-53
1170	7-21-06		1-16-37			DB 7-23-54
1171	7-16-06		1-16-37			DB 6-23-53
1172	7-04-06		2-01-37			DB 4-23-53
1173	7-20-06		2-01-37			DB 6-16-53
1174	7-08-06		2-01-37			BS 8-28-53 TSC
1175	7-03-06		2-19-37			BS 2-01-54 TSC
1176	6-30-06		2-19-37	4-20-42		BS 8-21-53 TSC
1177	7-24-06		2-19-37			DB 6-02-53
1178	7-29-06		2-19-37			DB 7-07-54
1179	7-26-06		3-17-37			AD 12- -40 (10-29-40)
1180	8-04-06		2-19-37			DB 6-26-54
1181	8-04-06		1-16-37			DB 6-30-54
1182	8-04-06		3-17-37			DB 6-26-54
1183	8-07-06		3-17-37			DB 6-26-54
1184	8-12-06		3-17-37			DB 6-26-54
1185	8-13-06		3-17-37	5-10-47		DB 6-30-54
1186	8-12-06		11-25-36			BS 4-06-54 TSC
1187	8-11-06		11-25-36			DB 7-07-53
1188	8-11-06		11-26-36			DB 7-23-53
1189	8-11-06	(8-30)	11-25-36			DB 7-07-53
1190	8-13-06		11-26-36			DB 7-23-54
1191	8-13-06		11-19-36			DB 7-07-53
1192	8-14-06		11-17-36			DB 6-30-54
1193	8-14-06		11-21-36			DB 7-07-54
1194	8-14-06		11-21-36			DB 5-26-53
1195	8-13-06		11-20-36			DB 6-02-53
1196	9-03-06		11-20-36			DB 6-02-53
1197	11-10-06		11-20-36	9-25-41		BS 10-06-53 TSC
1198	11-27-06		11-25-36			AD 9-14-51
1199	11-25-06		11-28-36			BS 6-15-53 TSC
1200	11-10-06		11-25-36	11-29-40		BS 10-12-53 DPM
1201	12-01-06		12-06-36	9-25-41		BS 7-29-53 TSC
1202	12-04-06					CS 10-20-18 DSR 289
1203	12-04-06		12-06-36	11-18-40		BS 12-11-53 TSC
1204	12-03-06					CS 10-20-18 DSR 290
1205	12-08-06		12-06-36			DB 7-15-54
1206	9-03-06	(12-21)	12-06-36			DB 4-13-53
1207	12-10-06		12-06-36	9-12-41		DB 11-30-54
1208	12-04-06		12-16-36	8-30-41		BS 9-03-53 DPM
1209	12-19-06		12-16-36	12-16-40		BS 2-25-54 TSC
1210	12-14-06		12-16-36	11-18-40		DB 7-15-54
1211	12-04-06		12-16-36	8-30-41		BS 12-07-53 TSC
1212	11-23-06					CS 10-20-18 DSR 291
1213	11-23-06		12-16-36			BS 12-22-53 TSC
1214	12-14-06		12-24-36			BS 1-13-54 TSC
1215	11-27-06		12-24-36	8-19-41		BS 7-01-54 TSC
1216	12-17-06		12-24-36			DB 7-28-54
1217	12-23-06		12-24-36	11-11-41		DB 4-13-53
1218	12-19-06		12-24-36	9-25-41		BS 2-08-54 TSC
1219	12-23-06		12-06-35	4-28-44		DB 8-20-54

Car #	Built	Reblt-FE	Rblt-OM	Steel Plt	Reblt-Other	Disposition
1220	12-17-06		12-06-35			DB 7-28-54
1221	2-12-07		12-06-35	1-24-50		DB 11-30-54
1222	2-14-07		10-29-35			BS 10-01-53 TSC
1223	2-16-07		12-06-35	5-14-45		DB 8-13-54
1224	2-20-07		12-06-35	9-19-40		BS 8-21-53 TSC
1225	2-21-07		11-30-35			DB 6-23-53
1226	2-23-07		12-03-35			DB 6-30-53
1227	2-26-07		6-18-35	6-04-40		BS 6-19-53 TSC
1228	2-26-07		11-30-35			DB 6-30-53
1229	3-02-07		11-30-35			DB 6-30-53
1230	3-05-07				DE 9-10-31	DB 11-21-52
1231	3-08-07					CS 10-20-18 DSR 292
1232	3-08-07					CS 10-20-18 DSR 293
1233	3-12-07		11-30-35			DB 8-05-54
1234	3-15-07					CS 10-20-18 DSR 294
1235	3-16-07		12-03-35	8-14-40		BS 11-21-52 TSC
1236	3-19-07		6-18-35			DB 7-07-54
1237	3-21-07		6-18-35	5-09-40		BS 3-26-54 TSC
1238	3-22-07		12-03-35			BS 4-07-54 TSC
1239	3-29-07		11-06-35			BS 8-03-53 TSC
1240	3-27-07		12-06-35			DB 6-26-54
1241	4-02-07		11-06-35			BS 4-22-54 TSC
1242	4-05-07		11-30-35			BS 4-09-54 TSC
1243	4-07-07		11-06-35	10-17-45		BS 4-19-54 TSC
1244	4-16-07		6-18-35	6-27-49		BS 5-06-53 TSC
1245	4-16-07		6-18-35	8-02-40		BS 5-05-54 TSC
1246	5-24-07		11-06-35			DB 7-07-54
1247	6-01-07		11-06-35	10-11-40		DB 11-21-52
1248	6-04-07		12-03-35			DB 6-30-54
1249	7-05-07		11-18-35			DB 6-30-54
1250	7-10-07		11-18-35			DB 7-07-54
1251	7-12-07		11-18-35			DB 6-30-54
1252	7-13-07		11-18-35			DB 6-30-54
1253	7-21-07		11-18-35			DB 6-30-54
1254	7-24-07	8-30-28				DB 6-13-52
1255	7-27-07 (6-15)					DB 6- -38
1256	8-01-07 (6-20)					DB 6- -38
1257	8-03-07 (6-21)					DB 4- -39
1258	8-08-07 (6-23)					AD 3-03-20(2-26-20)
1259	8-10-07 (6-29)					DB 6- -38
1260	6-15-07 (6-29)					DB 4- -39
1261	6-20-07 (7-27)				RG 96 9-09-38	DB 11-21-52
1262	6-21-07 (8-01)					DB 4- -39
1263	6-22-07 (8-02)					DB 4- -39
1264	6-29-07 (8-08)					DB 6- -38
1265	6-29-07 (8-10)					DB 6- -38
1266	8-29-07	9-29-28				DB 7-07-54
1267	9-01-07	10-29-28				CD 6-10-53 STM
1268	9-01-07	8-31-28				BG 7-06-53
1269	9-01-07	12-28-28 (8-31)				AD 7-15-54(3-21-54)
1270	9-01-07	10-29-28				DB 7-07-54
1271	9-01-07	10-29-28				DB 7-07-53
1272	10-12-07	12-28-28 (9-29)				DB 5-14-52
1273	10-14-07	12-21-28 (9-30)				DB 6-13-52

Car #	Built		Reblt-FE		Rblt-OM	Steel Plt	Reblt-Other	Disposition
1274	10-18-07		10-16-28	(10-02)				DB 6-13-52
1275	10-23-07		10-16-28	(10-06)				AD 12-01-45(10-15-45)
1276	10-23-07		10-16-28	(10-06)				DB 6-13-52
1277	10-23-07		10-16-28	(10-10)				DB 5-14-52
1278	10-26-07		9-29-28	(10-15)				DB 5-14-52
1279	10-26-07		8-30-28	(10-20)				DB 5-14-52
1280	10-26-07		10-29-28	(10-20)				DB 5-14-52
1281	10-28-07		10-16-28					DB 5-14-52
1281	11-01-07		10-29-28					DB 5-14-52
1283	11-11-07		11-03-28	(10-29)				DB 5-09-52
1284	11-15-07		8-29-28	(11-05)				DB 5-15-52
1285	11-11-07		8-29-28	(11-05)				DB 5-06-52
1286	11-27-07		9-29-28	(11-08)				DB 5-06-52
1287	11-22-07		8-31-28	(11-08)				DB 1-14-52
1288	11-22-07		8-30-28					DB 5-09-52
1289	11-26-07		8-29-28	(7-23)				DB 5-09-52
1290	11-30-07		7-22-28	(7-23)				DB 5-09-52
1291	3-10-08		12-12-28	(12-05)				DB 5-06-52
1292	3-16-08		11-03-28	(11-15)				DB 5-06-52
1293	3-19-08		12-12-28	(11-20)	11-27-31			BS 6-07-54 TSC
1294	3-17-08		12-21-28	(11-22)	11-27-31	1-14-41		DB 8-05-54
1295	3-21-08		12-21-28	(11-22)	11-27-31			BS 6-28-54 TSC
1296	3-26-08		11-21-28	(11-16)	11-27-31			AD 6-18-54 (4-03-54)
1297	3-30-08		12-28-28	(11-16)	11-27-31			DB 7-23-54
1298	4-01-08		11-28-28	(11-18)	11-24-31			DB 7-28-54
1299	4-06-08		12-12-28	(11-20)	11-24-31			DB 8-20-54
1300	4-09-08		12-21-28	(11-24)	11-24-31			CD 9-17-54 MTM
1301	4-11-08		9-29-28	(11-24)	11-24-31			DB 7-28-54
1302	4-15-08		12-11-28	(11-26)	11-24-31	7-28-41		BS 6-28-54 TSC
1303	4-17-08		8-29-28	(11-26)	11-06-31			BS 6-08-54 DPM
1304	4-18-08		11-03-28	(11-27)	11-06-31	8-07-41		DB 8-05-54
1305	5-21-08		11-28-28	(11-27)	11-06-31			BS 6-04-54 TSC
1306	5-20-08		11-21-28	(11-28)	11-06-31			DB 7-28-54
1307	5-28-08		12-21-28	(11-28)	11-06-31	9-22-47		DB 8-05-54
1308	5-20-08		12-28-28	(11-29)	11-06-31			BS 6-29-54 TSC
1309	5-27-08		11-28-28	(11-30)	11-06-31			BS 6-16-54 TSC
1310	10-02-08		12-17-28	(11-30)	11-06-31			BS 6-07-54 TSC
1311	10-02-08		12-17-28	(12-04)	11-06-31	1-14-41		DB 8-10-54
1312	10-02-08		12-17-28	(12-04)	11-06-31	6-20-42		AD 7-15-54 (3-21-54)
1313	10-02-08		11-21-28	(12-05)	10-30-31			DB 8-10-54
1314	10-02-28		11-21-28	(12-05)	10-30-31			BS 5-26-54 TSC
1315	10-29-08		12-17-28	(12-06)	10-30-31	7-27-42		AD 7-07-54 (3-21-54)
1316	10-29-08		9-29-28	(12-06)	10-30-31			DB 8-13-54
1317	10-29-08		12-11-28	(12-07)	10-30-31	11-27-42		DB 4-13-53
1318	10-29-08		12-11-28	(12-07)	10-30-31	10-30-41		DB 4-23-53
1319	10-29-08	(11-02)	11-28-28	(12-07)	10-30-31			DB 7-23-54
1320	11-02-08		11-03-28	(12-08)	10-30-31			DB 7-23-54
1321	11-02-08		12-11-28	(12-08)	10-30-31	9-22-47		AD 6-26-54 (3-21-54)
1322	11-18-08		12-12-28	(12-11)	10-20-31			DB 7-28-54
1323	11-19-08		12-12-28	(12-14)	10-20-31			DB 7-23-54
1324	11-25-08		11-21-28	(12-20)	10-20-31			DB 7-23-54
1325	12-02-08		11-03-28	(12-20)	10-20-31	7-27-42		DB 8-20-54
1326	12-07-08		11-28-28	(12-26)	10-20-31	6-12-42		BS 6-25-54 TSC
1327	12-07-08		12-11-28	(12-27)	10-30-31			DB 7-23-54

Car #	Built	Rebuilt-FE	Rebuilt-OM	Steel Plt	Reblt-Other	Disposition
1328	12-30-08	12-17-28(12-27)	6-30-31	10-07-41		DB 8-05-54
1329	12-30-08	7-08-24				DB 7-27-51
1330	12-30-08	6-12-24				AD 4-15-48 (3-14-48)
1331	12-31-08	6-27-24				DB 9-10-47
1332	12-31-08	6-20-24				DB 10-27-49
1333	12-31-08	6-09-24				DB 9-02-49
1334	1-25-09	6-20-24				DB 9-10-47
1335	1-29-09	6-12-24				DB 3-24-52
1336	2-01-09	6-06-24				DB 8-03-49 (7-20?)
1337	2-04-09	5-28-24				DB 8-03-49
1338	2-08-09	5-21-24				DB 3-19-52
1339	2-10-09	7-03-24				DB 1-14-52
1340	2-12-09	6-27-24				DB 4-04-52
1341	2-16-09	5-23-24				DB 11-16-51
1342	2-18-09	6-02-24				DB 4-16-52
1343	2-20-09	5-14-24				DB 4-16-52
1344	2-23-09	5-07-24				DB 9-02-49
1345	2-26-09	6-09-24				DB 4-29-52
1346	2-26-09	5-17-24				DB 4-29-52
1347	3-02-09	5-22-24				DB 6-13-52
1348	3-04-09	6-12-24				DB 5-15-52
1349	3-06-09	6-27-24			SC 97 8-15-47	BS 6-01-54 DPM
1350	3-11-09	6-27-24				DB 7-27-51
1351	3-11-09	7-03-24				DB 3-19-52
1352	3-13-09	5-29-24				DB 9-02-49
1353	3-16-09	6-16-24				AD 10-19-46 (4- -43)
1354	3-19-09	6-11-24				BT 10-20-49 BS 5-20-54 DPM
1355	3-22-09	6-25-24				DB 5-06-52
1356	3-24-09	6-25-24				DB 9-14-49
1357	3-25-09	6-06-24				DB 4-29-52
1358	3-27-09	6-18-24				DB 10-27-49
1359	3-29-09	6-04-24				DB 10-09-49
1360	7-26-09	6-20-24				DB 9-21-49
1361	7-31-09	6-12-24				DB 11-15-47
1362	8-03-09	5-27-24				DB 4-16-52
1363	8-09-09	5-23-24				DB 10-03-47
1364	8-09-09	6-11-24				DB 11-16-51
1365	8-13-09	5-17-24				DB 10-03-47
1366	8-14-09	6-25-24				DB 4-16-52
1367	8-16-09	5-31-24				DB 4-29-52
1368	8-22-09	7-03-24				DB 8-30-51
1369	8-24-09	6-20-24				DB 1-14-52
1370	8-25-09	6-09-24				DB 4-29-52
1371	9-01-09	6-12-24				DB 8-03-49
1372	9-02-09	6-11-24				DB 11-04-47
1373	9-02-09	5-15-24				DB 10-12-49
1374	9-03-09	7-03-24				BT 7-15-49 BS 5-20-54 DPM
1375	9-05-09	5-27-24				DB 4-16-52
1376	9-05-09	7-08-24				DB 5-09-52
1377	9-06-09	6-25-24				DB 7-12-49
1378	9-06-09	6-18-24				DB 9-30-49
1379	9-06-09	5-26-24				DB 10-27-49

Car #	Built	Rebuilt-FE	Rebuilt-OM	Steel Plt	Reblt-Other	Disposition
1380	1-01-10	5-15-24				DB 10-09-49
1381	1-11-10	7-09-24				DB 11-30-51
1382	1-17-10	5-16-24	7-31-35			DB 7-07-54
1383	1-21-10	6-18-24				DB 4-16-52
1384	1-29-10	6-05-24	10-29-35			BS 10-12-53 TSC
1385	1-31-10	6-09-24	7-31-35	11-08-45		BS 3-05-54 TSC
1386	2-03-10	6-06-24	10-27-35			DB 6-10-53
1387	2-04-10	6-03-24	10-27-35			DB 6-16-53
1388	2-14-10	5-31-24	10-29-35			BS 10-22-53 TSC
1389	2-15-10	6-03-24	10-19-35	8-31-45		DB 7-23-54
1390	2-18-10	5-22-24	10-19-35	6-20-45		BS 9-24-53 TSC
1391	2-23-10	5-29-24	7-31-35	8-31-45		DB 6-10-53
1392	2-25-10	6-04-24	10-18-35			DB 4-23-53
1393	3-02-10	6-18-24	7-31-35			DB 5-26-53
1394	3-03-10	6-12-24	10-18-35	10-11-40		BS 8-25-53 TSC
1395	2-18-10	5-16-24	10-18-35			DB 5-07-53
1396	3-03-10	6-09-24	10-18-35	6-04-40		BS 8-25-53 TSC
1397	2-26-10	6-16-24	10-18-35	11-05-40		BS 10-20-53 TSC
1398	3-01-10	5-14-24	7-31-35	10-11-40		DB 6-23-53
1399	3-03-10	6-11-24				DB 10-27-49
1400	3-07-10	5-28-24				DB 7-27-51
1401	3-04-10	5-22-24				DB 5-14-52
1402	3-06-10	6-05-24	7-02-35	2-23-40		BS 6-21-54 TSC
1403	3-09-10	5-21-24				DB 4-10-52
1404	3-10-10	11-21-23				DB 5-09-52
1405	4-21-10	1-25-24				DB 8-24-49
1406	4-22-10	12-19-23				DB 7-12-49
1407	4-27-10	2-09-24				DB 4-29-52
1408	4-30-10	1-25-24	6-27-35	9-09-40		DB 12-10-52
1409	3-04-10	1-14-24				DB 4-29-52
1410	3-09-10	1-23-24				DB 4-16-52
1411	3-14-10	2-05-24				DB 7-07-49
1412	5-07-10	11-16-23				DB 7-07-49
1413	5-06-10	11-28-23				DB 8-24-49
1414	5-10-10	11-06-23				DB 9-10-47
1415	5-16-10	11-08-23	8-29-35	9-09-40		BS 3-24-54 TSC
1416	5-18-10	1-03-24				DB 3-20-52
1417	5-21-10	11-23-23	7-17-35	8-14-40		DB 6-16-53
1418	5-28-10	1-30-24				DB 5-06-52
1419	6-02-10	2-06-24				DB 8-30-51
1420	6-06-10	2-20-24	8-29-35	8-09-45		DB 6-02-53
1421	6-30-10	1-04-24				DB 9-30-49
1422	7-01-10	12-06-23				DB 4-08-52
1423	7-02-10	1-12-24				DB 4-08-52
1424	7-02-10	1-18-24	7-02-35			DB 11-30-54
1425	11-04-10	1-23-24	8-29-35	5-02-40		DB 4-23-53
1426	11-02-10	12-27-23				DB 4-04-52
1427	11-06-10	1-10-24				DB 11-16-51
1428	11-11-10	1-30-24				DB 12-02-47
1429	11-15-10	12-18-23				DB 1-14-52
1430	11-01-10	2-21-24	6-27-35			DB 5-18-53
1431	11-05-10	2-05-24				DB 6-23-49
1432	11-06-10	2-09-24				DB 11-18-49
1433	11-14-10	12-05-23	6-27-35	2-07-45		BS 2-12-54 TSC

Car #	Built	Rebuilt-FE	Rebuilt-OM	Steel Plt	Reblt-Other	Disposition
1434	11-14-10	1-11-24				DB 12-02-47
1435	11-23-10	2-09-24				DB 8-03-49
1436	11-23-10	12-29-23				DB 5-06-52
1437	11-25-10	1-02-24	8-23-35			DB 4-13-53
1438	11-28-10	1-08-24				DB 11-18-49
1439	11-30-10	1-25-24				DB 5-09-52
1440	12-01-10	1-23-24	7-17-35	12-05-44		BS 4-28-54 TSC
1441	12-03-10	12-04-23	7-02-35	6-04-40		BS 12-14-53 TSC
1442	12-05-10	11-30-23				DB 8-24-49
1443	12-05-10	1-30-24				DB 9-30-49
1444	12-10-10	11-07-23				DB 9-02-49
1445	12-10-10	12-15-23				DB 12-02-47
1446	12-10-10	2-21-24	8-23-35	1-11-45		DB 7-07-53
1447	12-10-10	1-07-24				DB 12-02-47
1448	12-10-10	11-14-23	8-23-35			DB 4-13-53
1449	12-10-10	1-04-24	8-29-35			AD 1-02-48 (12-16-47)
1450	1-17-11	2-09-24	8-23-35			BS 3-02-54 TSC
1451	2-03-11	11-30-23	7-02-35	7-22-40		DB 6-23-53
1452	1-21-11	11-17-23				DB 8-24-49
1453	1-21-11	12-12-23				DB 9-30-49
1454	1-31-11	2-05-24	6-27-35			BS 10-30-53 TSC
1455	1-31-11	1-17-24				DB 9-21-49
1456	2-03-11	1-18-24				DB 10-03-47
1457	1-21-11	2-21-24				DB 1-14-52
1458	1-25-11	11-16-23				DB 9-14-49
1459	2-02-11	1-22-24				DB 1-14-52
1460	1-31-11	1-15-24				DB 3-24-52
1461	1-28-11	12-21-23				DB 5-09-52
1462	1-21-11	1-31-24	7-02-35	9-09-40		BS 9-01-53 TSC
1463	2-04-11	11-23-23				DB 9-14-49
1464	2-04-11	11-28-23	9-18-35			DB 6-23-53
1465	1-17-11	2-26-24	7-28-34	8-05-44		BS 6-23-53 TSC
1466	1-28-11	11-09-23	7-28-34	10-26-49		BS 5-27-53 TSC
1467	2-01-11	2-26-24	7-28-34			DB 7-07-53
1468	2-08-11	12-13-23	9-18-35	10-01-40		BS 7-19-54 TSC
1469	2-08-11	2-25-24	7-28-34	8-09-39		BS 8-18-53 TSC
1470	2-04-11	12-13-23	7-28-34			BS 6-21-54 TSC
1471	2-08-11	12-28-23				DB 7-07-49
1472	2-13-11	12-11-23				DB 4-10-52
1473	2-10-11	1-09-24	9-18-35			BS 4-05-54 TSC
1474	2-10-11	1-12-24				DB 9-14-49
1475	2-14-11	1-25-24	8-06-34			DB 5-07-53
1476	2-14-11	11-05-23				BT 8-03-49 BS 5-20-54 DPM
1477	2-14-11	12-19-23				DB 11-15-47
1478	2-16-11	11-30-23				DB 5-06-52
1479	2-15-11	2-13-23	2-06-34			DB 5-18-53
1480	2-11-11	1-31-23	9-06-34			DB 6-23-53
1481	2-17-11	2-07-23				DB 8-26-47
1482I	2-16-11					CS 6-28-11 DSR 238
1482II	2-03-12	5-08-22	9-05-34			DB 6-26-54
1483I	2-18-11					CS 6-28-11 DSR 239
1483II	2-06-12	2-08-23				DB 4-29-52
1484I	2-18-11					CS 6-28-11 DSR 240

Car #	Built	Rebuilt-FE	Rebuilt-OM	Steel Plt	Reblt-Other	Disposition
1484II	2-08-12	1-29-23				DB 10-29-47
1485I	2-18-11					CS 6-29-11 DSR 241
1485II	2-10-12	12-20-22	8-23-35	11-05-40		DB 7-14-53
1486	2-11-12	2-14-23				DB 11-18-49
1487	2-12-12	3-24-23	5-13-42	5-13-42		BS 1-20-54 TSC
1488	2-13-12	3-19-23	9-06-34			DB 10-05-54
1489	2-14-12	3-07-23	7-17-35			DB 4-13-53
1490	2-15-12	12-20-22	5-13-42	5-13-42		BS 1-20-53 TSC
1491	2-16-12	3-16-23	5-13-42	5-13-42		DB 5-07-53
1492	2-17-12	2-28-23	7-17-35	10-23-40		BS 4-09-54
1493	2-20-12	3-29-23				DB 7-12-49
1494	2-21-12	3-29-23	8-23-34			DB 11-01-54
1495	2-23-12	4-03-23	3-20-34	10-07-41		BS 2-11-54 TSC
1496	2-24-12	4-06-23	5-16-34	11-07-39		BS 1-26-53 TSC
1497	2-26-12	1-30-23	8-29-35	8-14-40		BS 12-04-53 TSC
1498	2-27-12	2-20-23	9-06-34			DB 7-14-53
1499	2-28-12	5-13-23	5-16-34	6-22-44		BS 7-27-54 TSC
1500	2-29-12	5-21-23	5-13-42	5-13-42		DB 8-14-53
1501	3-01-12	5-21-23	6-27-35	4-16-40		BS 7-01-53 TSC
1502	3-04-12	5-26-23	9-05-34			DB 7-14-53
1503	3-05-12	2-07-23	9-28-35	11-08-45		DB 7-14-53
1504	3-04-12	5-26-23	9-28-35	8-27-40		BS 6-09-53 TSC
1505	3-05-12	12-20-22	9-28-35	11-01-45		BS 7-14-53 TSC
1506	3-06-12	1-26-23	5-16-34	3-18-39		BS 2-25-54 TSC
1507	3-17-12	5-13-23	5-16-34	10-08-48		AD 6-13-52 (5-03-52)
1508	3-18-12	5-25-23	5-25-34	9-20-44		BS 8-03-53 TSC
1509	3-21-12	3-16-23	9-28-35			BS 5-04-54 TSC
1510	3-22-12	1-19-23	9-28-35			DB 8-14-53
1511	3-25-12	5-25-23	9-18-35			DB 7-15-54
1512	3-25-12	5-26-23	9-06-34	12-14-49		BS 2-24-54 TSC
1513	3-27-12	5-26-23	9-10-35			BS 3-01-54 TSC
1514	3-27-12	4-09-23				DB 3-20-52
1515	3-28-12	1-19-23	9-05-34	6-15-39		BS 1-22-54 TSC
1516	3-29-12	4-09-23	5-13-42	5-13-42		BS 9-15-53 TSC
1517	3-29-12	3-29-23	9-05-34	7-23-46		BS 6-25-53 TSC
1518	3-29-12	3-15-23	5-25-34	6-27-39		BS 6-04-53 TSC
1519	3-29-12	12-18-22	8-14-34	7-15-44		BS 6-03-53 TSC
1520	4-01-12	4-09-23	8-14-34			DB 5-26-53
1521	4-02-12	3-29-23	8-14-34	9-13-44		DB 7-14-53
1522	4-02-12	1-25-23	6-28-34			DB 6-02-53
1523	4-03-12	4-09-23	9-10-35			DB 5-07-53
1524	4-03-12	3-29-23	6-28-34			DB 7-23-53
1525	4-05-12	2-07-23	9-10-35			DB 6-26-54
1526	4-05-12	4-09-23	9-10-35			DB 8-14-53
1527	4-06-12	4-03-23	6-28-34			DB 5-07-53
1528	4-07-12	2-28-23	7-03-34	10-10-39		DB 6-10-53
1529	4-09-12	1-31-23	6-28-34	4-29-39		BS 2-25-53 MRW
1530	4-09-12	12-18-22	8-14-34			DB 6-30-53
1531	4-10-12	12-15-22	7-03-34			DB 6-30-53
1532	5-01-12	12-20-22	9-10-35			DB 11-30-54
1533	5-11-12	4-03-23	6-29-34			DB 11-01-54
1534	5-11-12	3-24-23	7-17-35	5-09-40		DB 12-10-52
1535	5-15-12	3-19-23	5-25-34	10-26-49		BS 7-17-53 TSC
1536	5-17-12	2-16-23	5-25-34	6-06-49		DB 8-05-54

Car #	Built	Rebuilt-FE	Rebuilt-OM	Steel Plt	Reblt-Other	Disposition
1537	5-18-12	3-09-23	9-18-35			DB 6-23-53
1538	5-22-12	3-24-23	8-21-33	10-08-48		BS 10-05-53 TSC
1539	5-25-12	1-23-23	7-03-34	7-24-39		DB 11-30-54
1540	5-29-12	3-19-23	8-21-33	12-16-40		BS 7-15-53 TSC
1541	5-29-12	2-13-23	8-21-33	8-09-39		BS 1-28-53 MRW
1542	6-07-12	2-15-23				DB 11-16-51
1543	6-07-12	1-30-23	8-21-33	6-15-39		BS 9-30-53 TSC
1544	6-12-12	2-28-23	8-21-33			BS 6-25-54 TSC
1545	6-13-12	12-20-22	7-03-34	4-07-39		BS 7-10-53 TSC
1546	6-14-12	3-01-23	7-07-34			DB 7-28-54
1547	6-18-12	12-15-22				DB 10-12-49
1548	6-19-12	12-17-22	8-18-33			DB 4-13-53
1549	6-20-12	2-15-23	7-07-34			DB 7-23-54
1550	6-22-12	3-10-23	8-14-34	12-02-49		BS 7-08-53 TSC
1551	6-25-12	3-19-23	8-18-33			BS 3-31-54 TSC
1552	6-26-12	3-24-23	8-18-33	5-26-43		DB 8-14-53
1553	7-01-12	3-16-23	8-24-34	4-05-40		BS 12-31-52 TSC
1554	7-24-12	10-30-21	8-23-34			DB 7-14-53
1555	7-26-12	10-30-21				DB 8-30-51
1556	7-27-12	4-20-21	8-18-33			BS 4-20-54 TSC
1557	7-30-12	9-15-21	6-28-34	2-03-40		BS 9-14-53 TSC
1558	8-01-12	4-07-21	7-07-34			DB 11-30-54
1559	8-03-12	10-23-20	8-18-33	3-02-43		DB 7-28-54
1560	8-05-12	4-14-21	8-31-33	9-16-48		BS 2-19-54 TSC
1561	8-07-12	4-29-21	10-19-35	11-18-40		BS 3-11-54 TSC
1562	8-09-12	10-30-21	10-19-35	10-01-40		DB 6-02-53
1563	8-09-12	4-18-21				DB 11-30-51
1564I	8-11-12					CS 11-13-12 DSR 252
1564II	4-01-13	10-25-21	7-07-34			DB 11-01-54
1565I	8-12-12					CS 11-13-12 DSR 253
1565II	4-12/02-13	10-25-21	8-31-33	11-07-49		BS 7-09-53 TSC
1566I	8-26-12					CS 11-13-12 DSR 254
1566II	3-14/4-03-13	3-03-21	8-31-33	1-09-40		BS 8-31-53 TSC
1567	8-27-12	4-26-21	8-31-33			DB 6-16-53
1568	8-28-12	3-12-21	7-07-34	7-15-44		DB 11-01-54
1569	8-30-12	8-12-21	8-31-33	12-22-39		DB 7-14-53
1570	8-31-12	4-14-21	9-01-33	9-16-38		BS 5-18-54 TSC
1571	8-31-12	3-12-21	9-01-33	5-09-40		BS 8-10-53 TSC
1572	8-31-12	12-14-20	9-01-33			DB 5-07-53
1573	9-07-12	1-26-21	6-29-34	10-10-39		BS 2-17-54 TSC
1574	9-07-12	1-26-21	9-01-33	7-03-43		BS 4-09-54 TSC
1575	9-09-12	10-25-21	9-22-33	6-11-48		BS 7-27-53 TSC
1576	9-11-12	3-04-21	6-29-34			BS 5-18-54 TSC
1577	9-12-12	3-09-21	9-13-33	4-29-40		BS 10-13-53 DPM
1578	9-13-12	10-25-21	9-13-33			BS 10-16-53 TSC
1579	9-16-12	4-07-21	9-13-33			BS 10-02-53 TSC
1580	9-17-12	1-20-21	9-13-33			BS 3-17-54 TSC
1581	10-01-12	3-18-21	9-13-33	9-27-39		BS 8-07-53 TSC
1582	4-16-13	3-17-21	9-22-33	2-03-40		BS 8-27-53 TSC
1583	4-19-13	10-25-21	9-22-33	12-10-48		BS 4-29-54 TSC
1584	4-19-13	11-09-20	5-16-34			BS 2-23-54 TSC
1585	4-23-13	5-12-21	7-03-34			BS 10-07-53 TSC
1586	4-25-13	4-28-21	5-31-34	9-26-44		BS 6-11-53 TSC
1587	4-26-13	5-27-21	9-22-33	4-29-40		BS 7-29-53 TSC

Car #	Built	Rebuilt-FE	Rebuilt-OM	Steel Plt	Reblt-Other	Disposition
1588	4-29-13	12-22-20	3-20-34	7-15-48		BS 9-03-53 TSC
1589	5-06-13	4-15-21	9-22-33	5-25-43		BS 8-12-53 TSC
1590I	5-08-13	10-11-20				1625II
1625II		7-02-21	8-30-34			DB 7-28-54
1591	5-09-13	12-03-20	9-22-33			DB 5-26-53
1592	5-01-13	9-15-21	10-19-35	5-21-40		BS 12-31-53 TSC
1593	5-03-13	3-09-21	9-22-33	8-19-48		BS 4-27-54 TSC
1594	5-13-13	1-07-21	9-22-33	9-12-49		BS 2-18-54 TSC
1595	5-15-13	2-21-21	6-29-34	10-10-39		BS 8-18-53 TSC
1596	5-17-13	3-01-21	9-22-33	12-23-49		BS 9-08-53 TSC
1597	5-21-13	1-26-21	9-22-33	4-21-43		BS 12-04-52 TSC
1598	5-22-13	2-01-21	9-01-33			DB 2-06-53
1599I	5-24-13	3-02-21				1601II
1601II		7-10-21	8-13-35			DB 7-23-53
1600	5-27-13	7-12-21*	4-23-34			DB 6-16-53
1601I	5-27-13					1599II
1599II		6-27-21#	9-05-34			DB 6-30-54
1602I	6-03-13					1590II
1590II		7-06-21	6-29-34	11-07-39		BS 6-04-54 TSC
1603	6-05-13	7-02-21	4-23-34	10-04-49		BS 7-20-53 TSC
1604I	6-07-13					1626II
1626II		7-06-21#	5-06-34			BS 6-02-54 TSC
1605	6-10-13	7-02-21	4-23-34			AD 7-27-51 (7-20-51)
1606I	6-13-13					1630II
1630II		7-07-21#	8-06-34	10-20-39		DB 6-02-53
1607	6-17-13	6-10-21#	4-23-34	11-07-39		BS 4-07-54 TSC
1608I	6-19-13					1633II
1633II		6- -21	6-18-34			DB 6-02-53
1609I	6-20-13					1640II
1640II		7-14-21#	6-12-34	6-27-39		DB 6-30-53
1610I	9-30-13					1642II
1642II		7-06-21#	8-30-34			DB 8-20-54
1611I	9-30-13					1644II
1644II		7-14-21#	6-12-34			DB 5-18-53
1612I	10-03-13					1650II
1650II		6-27-21#	7-20-34	4-22-49		BS 6-18-53 TSC
1613I	10-06-13					1655II
1655II		7-14-21#	3-29-33	4-20-42		DB 12-10-52
1614	10-07-13	6-27-21#	4-30-34	9-12-49		DB 5-26-53
1615	10-15-13	7-07-21#	5-06-34			BS 6-09-54 DPM
1616I	10-15-13					1669II
1669II		7-14-21#	4-12-32	4-13-45		BS 3-22-54 TSC
1617	10-15-13	7-14-21#	7-25-35			DB 7-15-54
1618I	10-14-13					1670II
1670II		5-27-21#	6-15-33			DB 6-10-53
1619I	10-14-13					1671II
1671II		6- -21	6-15-33	4-14-44		DB 8-13-54
1620	10-20-13	7-01-21	5-06-34	6-19-49		BS 7-31-53 TSC
1621I	10-18-13					1699II
1699II		6- -21	5-26-33			AD 11-09-37 (9-10-37)
1622	10-18-33	6-27-21#	8-13-35	11-18-40		DB 6-10-53
1623I	10-18-33					1766II
1766II		6- -21	6-03-32	2-14-40		BS 12-08-53 TSC

Car #	Built	Rebuilt-FE	Rebuilt-OM	Steel Plt	Reblt-Other	Disposition
1624I	10-18-13					1701II
1701II		6-27-21#	5-26-33	7-03-43		BS 6-03-54 TSC
1625I	10-22-13	5-18-21				1602II
1602II		7-06-21	4-23-34	10-19-44		BS 4-22-54 TSC
1626I	10-22-13	5-27-21				1604II
1604II		7- -21	8-13-35	11-17-45		BS 3-31-54 TSC
1627	10-23-13	4-25-21	8-06-34	5-19-39		BS 6-08-53 TSC
1628	10-23-13	4-14-21	6-18-34	6-15-39		BG 8-23-54
1629	10-23-13	12-16-20	6-18-34			AD 9- -36 (8-08-36)
1630I	10-25-13(21/24)	12-13-20				1606II
1606II		7- -21	8-13-35	9-19-40		BS 5-26-54 TSC
1631	10-25-13	3-18-21	8-06-34	6-27-39		DB 6-10-53
1632	10-25-13	2-10-21	8-30-34	5-06-44		BS 4-15-54 TSC
1633I	10-27-13	4-09-21				1608II
1608II		7-01-21	7-25-35	8-09-45		BS 2-16-54 TSC
1634	10-30-13	5-06-21	6-18-34	5-29-44		BS 9-17-53 TSC
1635	10-30-13	4-08-21	6-18-34	5-16-49		DB 6-10-53
1636	12-06-13	4-28-21	8-30-34			DB 5-26-53
1637	12-06-13	5-12-21	8-30-34	7-28-41		BS 7-30-54 TSC
1638	12-11-13	2-23-21	6-12-34			DB 8-14-53
1639	12-12-13	3-30-21	8-23-34	8-21-44		BS 6-18-54 TSC
1640I	12-13-13	2-26-21				1609II
1609II		7- -21	4-30-34			DB 7-14-53
1641	12-15-13	4-07-21	5-05-34			DB 5-07-53
1642I	12-17-13	5-12-21				1610II
1610II		7- -21	7-25-35			AD 9- -36 (8-08-36)
1643	12-18-13	2-15-21	6-12-34			DB 6-10-53
1644I	12-19-13	3-17-21				1611II
1611II		7- -21	6-12-34	8-07-41		DB 6-16-53
1645	12-20-13	4-09-21	5-31-34			DB 11-01-54
1646	12-22-13	4-06-21	5-31-34			DB 11-01-54
1647	12-24-13	2-26-21	8-23-34			BS 1-05-54 TSC
1648	12-26-13	4-09-21	7-20-34	1-09-50		BS 12-29-53 TSC
1649	12-27-13	3-28-21	6-12-34	6-14-44		BS 3-23-54 TSC
1650I	12-30/29-13	3-24-21				1612II
1612II		6- -21	4-30-34			AD 8-20-52 (5-18-52)
1651	12-30-13	3-31-21	7-20-34	6-11-50		BS 8-26-53 TSC
1652	12-30-13	2-15-21	7-20-34	10-04-49		BS 3-05-53 MRW
1653	12-30-13	3-12-21	7-20-34			BS 8-13-53 TSC
1654	12-31-13	4-25-21	3-29-33			DB 5-07-53
1655I	12-31-13	3-03-21				1613II
1613II		7- -21	4-30-34			AD 4-16-52 (12-26-51)
1656	1-03-14	4-22-21	3-29-33	2-03-40		DB 11-30-54
1657	1-03-14	2-01-21	3-29-33	10-02-45		DB 4-23-53
1658	1-03-14	2-25-21	3-29-33			BS 8-11-53 TSC
1659	1-03-14	3-09-21	5-17-33	12-18-47		DB 6-16-53
1660	1-05-14	2-04-21	5-17-33			DB 6-16-53
1661	12-31-13	12-16-20	5-17-33	9-28-48		BS 5-24-54 TSC
1662	1-07-14	2-26-21	5-04-33	4-23-45		BS 6-11-53 TSC
1663	1-08-14	2-04-21	5-11-33			BS 9-17-53 TSC
1664	1-13-14	2-26-21	5-17-33			DB 6-16-53
1665	1-08-14	12-14-20	5-17-33	10-04-43		DB 7-23-54
1666	1-12-14	5-27-21	5-16-33			BS 8-24-53 TSC
1667	1-16-14	1-14-21	5-16-33	1-17-49		DB 8-20-54

Car #	Built	Rebuilt-FE	Rebuilt-OM	Steel Plt	Reblt-Other	Disposition
1668	1-21-14	5-26-21	5-16-33			BS 8-12-53 TSC
1669I	1-21-14	4-06-21				1616II
1616II		7- -21	5-06-34	9-13-44		BS 6-08-54 TSC
1670I	1-21-14	2-21-21				1618II
1618II		7-02-21	7-25-35	4-05-40		DB 6-02-53
1671I	1-22-14	4-29-21				1619II
1619II		7-01-21	5-31-34	10-19-44		DB 6-26-54
1672	1-23-14	10-07-21	6-16-33			DB 6-26-54
1673	1-24-14	4-18-21	6-16-33	7-03-43		BS 8-17-53 TSC
1674	1-24-14	3-28-21	6-15-33			AD 3-02-40 (2-27-40)
1675	1-27-14	5-04-21	4-12-32	12-31-40		BS 6-09-54 TSC
1676	1-28-14	9-01-21	6-15-33			BS 6-17-54 TSC
1677	1-27-14	10-27-20	5-16-33	6-05-43		BS 8-14-53 TSC
1678	1-31-14	2-26-21	6-15-33	9-07-43		DB 8-05-54
1679	1-31-14	4-01-21	4-11-33	1-16-39		BS 6-22-53 TSC
1680	1-31-14	8-12-21	5-04-33	12-10-48		BS 6-08-54 TSC
1681	1-31-14	5-21-21	5-04-33			DB 6-30-53
1682	2-2/1-31-14	5-06-21	5-04-33			DB 7-28-54
1683	2-05-14	4-14-21	6-15-33	4-09-43		DB 2-06-53
1684	2-05-14	4-22-21	6-15-33			BS 12-03-53 TSC
1685	2-05-14	8-26-21	5-04-33	2-19-43		BS 2-10-54 TSC
1686	10-10/09-14	8-26-21	6-06-33	7-15-48		DB 8-10-54
1687	10-10-14	3-16-21	4-11-33	2-19-43		BS 6-29-53 TSC
1688	10-10-14	3-24-21	4-11-33	4-21-43		BS 5-13-54 TSC
1689	10-15-14	3-16-21	4-11-33			DB 7-07-53
1690	10-16/14-14	5-18-21	4-11-33			DB 7-23-53
1691	10-16/15-14	3-16-21	6-06-33	12-22-39		BS 8-24-53 TSC
1692	10-17/16-14	3-03-21	5-26-33	9-05-44		BS 2-18-54 DPM
1693	10-21/17-14	3-02-21	6-06-33			DB 5-26-53
1694	10-21/19-14	12-14-20	6-06-33	9-15-43		BS 8-03-54 TSC
1695	10-21-14	3-17-21	5-26-33	10-07-41		DB 5-18-53
1696	10-22/23-14	4-09-21	6-06-33			DB 4-23-53
1697	10-21/24-14	3-10-21	5-26-33			DB 5-26-53
1698	10-20/26-14	3-10-21	5-26-33			BS 5-24-54 TSC
1699I	10-28/27-14	5-07-21				1621II
1621II		7-01-21	5-06-34	10-12-44		DB 8-10-54
1700	10-29/28-14	5-17-21	6-10-32			DB 7-07-54
1701I	10-28/29-14	5-21-21				1624II
1624II		7-10-21	8-13-35	9-19-40		DB 6-16-53
1702	10-30-14	2-10-21	6-23-32	12-31-40		DB 7-23-53
1703	10-30/31-14	9-01-21	5-26-33	2-04-43		DB 5-18-53
1704	11-05/02-14	9-21-21	5-04-33	4-16-40		DB 5-26-53
1705	11-12/03-14	3-23-21	5-24-32	12-16-40		BS 3-03-54 TSC
1706	10-30/11-5-14	3-23-21	4-10-33	4-22-49		BS 6-07-54 DPM
1707	10-30/11-6-14	3-04-21	4-10-33			DB 7-07-54
1708	11-12/08-14	9-21-21	4-11-33	6-14-43		DB 7-15-54
1709	11-14/09-14	2-10-21	6-03-32	3-11-47		DB 6-10-53
1710	11-14/11-14	10-17-21	4-06-32	6-16-47		BS 4-06-54 TSC
1711	11-18/12-14	10-17-21	6-03-32			DB 6-02-53
1712	11-20/13-14	5-05-21	4-11-33	11-29-40		DB 4-23-53
1713I	11-20-14					CS 7-03-16 MACR 7
1713II	11-18-16	5-21-21	7-01-32	8-19-46		BS 1-06-53 TSC
1714	11-23/17-14	1-19-21	4-10-33	8-09-39		BS 7-03-53 TSC
1715	11-23/18-14	10-23-21	7-12-32	9-02-39		BS 3-04-54 TSC

Car #	Built	Rebuilt-FE	Rebuilt-OM	Steel Plt	Reblt-Other	Disposition
1716I	11-25-14					CS 7-27-16 DSR 269
1716II	11-15-16	3-09-21	7-12-32	7-07-45		BS 3-09-54 TSC
1717	11-25/20-14	3-26-21	4-29-32			DB 6-16-53
1718	11-30/23-14	12-31-20	6-10-32	6-13-40		DB 4-13-53
1719I	11-30-14					CS 7-27-16 DSR 268
1719II	11-17-16	3-26-21	7-01-32			DB 5-26-53
1720	11-30/25-14	4-09-21	5-26-33	11-27-42		DB 7-15-54
1721	11-30/26-14	3-28-21	5-20-32	11-29-40		DB 11-30-54
1722I	12-05-14					CS 7-27-16 DSR 270
1722II	11-15-16	12-30-20	7-07-32	6-06-47		DB 6-10-53
1723	12-7/11-28-14	3-18-21	7-01-32	12-22-39		BS 12-15-52 TSC
1724I	12-08-14					CS 7-27-16 DSR 267
1724II	11-17-16	3-26-21	5-26-33	5-31-38		BS 7-24-53 TSC
1725	12-08/01-14	9-01-21	5-26-33	7-15-44		BS 2-23-54 TSC
1726	12-08/02-14	9-01-21	5-11-32	7-31-43		BS 1-07-54 TSC
1727	12-12/03-14	9-01-21	4-06-32			DB 6-30-54
1728	12-14/04-14	4-29-21	6-16-33	1-04-49		AD 8-20-52 (5-18-52)
1729	12-16/05-14	9-21-21	4-06-32	7-28-41		DB 4-23-53
1730	12-16/07-14	5-20-21	6-11-32	3-06-45		BS 8-17-53 TSC
1731	12-18/08-14	5-11-21	6-15-32			DB 8-20-52
1732	12-19/09-14	5-27-21	6-16-33	12-10-48		BS 3-02-54 TSC
1733	12-23/10-14	12-17-20	6-02-32			DB 7-15-54
1734	12-23/11-14	10-07-21	5-10-32			DB 5-18-53
1735	12-24/12-14	3-03-21	5-24-32	3-17-43		BS 11-21-52 TSC
1736	12-29/28-14	8-22-21	7-12-32	9-22-49		BS 1-23-53 MRW
1737	12-30/31-14	2-22-21	6-02-32	2-14-40		BS 1-13-53 MRW
1738	12-31-14	3-26-21	6-02-32			DB 5-07-53
1739	12-31-14	3-24-21	7-01-32	11-26-48		DB 6-30-53
1740	1-06/05-15	10-23-20	6-27-33	11-25-47		DB 6-30-53
1741	1-07/06-15	3-18-21	5-23-32			DB 5-07-53
1742	1-14-15	5-17-21	6-27-33			DB 6-30-53
1743	1-07/06-15	3-31-21	6-22-32	12-22-39		DB 7-23-53
1744	1-15-15	9-28-21	5-04-33	5-22-44		DB 6-30-54
1745	1-13-15	10-29-20	6-27-33	4-22-44		BS 12-15-53 TSC
1746	1-15-15	1-20-21	5-11-32	8-10-46		DB 8-10-54
1747	1-18/22-15	3-02-21	6-27-33			DB 6-23-53
1748	1-16/18-15	9-29-21	6-27-33	11-01-48		BS 6-12-53 TSC
1749	1-27-15	12-21-20	6-30-33	1-20-40		BS 12-19-52 TSC
1750	1-26-15	1-14-21	6-30-33	5-22-44		BS 5-28-53 TSC
1751	1-27-15	5-27-21	6-23-32	1-17-49		BS 12-04-52 TSC
1752	1-26-15	8-12-21	4-29-32	8-05-42		BS 6-14-54 TSC
1753	2-02/03-15	3-12-21	5-04-33	8-19-48		BS 5-25-53 TSC
1754	2-01/03-15	3-12-21	6-28-33			DB 7-14-53
1755	2-01/03-15	3-31-21	6-28-33			BS 6-09-54 TSC
1756	2-03/04-15	2-23-21	5-24-32			BS 6-24-54 TSC
1757	2-03/04-15	4-09-21	7-12-32	8-09-43		BS 4-20-54 TSC
1758	2-04/05-15	12-13-20	6-28-33	6-14-43		BS 5-18-54 TSC
1759	2-06/05-15	2-25-21	5-04-33	7-28-38		BS 1-15-54 TSC
1760	2-06-15	9-21-21	4-12-32			DB 9-20-54
1761	2-08/10-15	3-12-21	7-01-32			DB 8-05-54
1762	2-09-15	4-26-21	7-01-32	4-07-47		DB 8-10-54
1763	2-09/11-15	3-23-21	6-13-32	4-29-39		BS 8-07-53 TSC
1764	2-10/11-15	9-21-21	6-14-32	9-15-43		DB 9-20-54
1765	2-11/14-15	4-28-21	4-02-32			DB 8-05-54

Car #	Built	Rebuilt-FE	Rebuilt-OM	Steel Plt	Reblt-Other	Disposition
1766I	2-12/15-15	4-27-21				1623II
1623II		7-01-21	7-25-35			DB 6-23-53
1767	2-12/15-15	8-25-21	5-06-32			DB 7-28-54
1768	2-13/17-15	4-28-21	7-01-32			DB 10-05-54
1769	2-13/17-15	12-20-20	6-14-32	11-24-39		BS 5-08-53 TSC
1770	2-13/20-15	3-10-21	4-02-32			DB 10-05-54
1771	2-17/21-15	12-17-20	7-01-32	9-07-43		BS 12-09-52 TSC
1772	2-17/21-15	5-25-21	6-22-32	7-21-43		DB 6-23-53
1773	2-20/22-15	3-24-21	6-28-33			AD 9-14-51
1774	2-20/24-15	3-04-21	4-02-32			DB 12-10-52
1775	2-20/25-25	3-10-21	6-30-33	8-22-39		DB 8-13-54
1776	11-18-15	3-04-21	6-30-33	8-27-43		BS 10-29-53 TSC
1777	11-23-15	4-14-21	6-30-33	1-20-40		BS 8-05-53 TSC
1778	11-19-15	3-12-21	5-21-32	2-03-40		BS 7-12-54 TSC
1779	11-20-15	10-29-20	5-06-32	1-09-40		DB 5-18-53
1780	11-24-15	9-28-21	5-10-32	11-17-45		BG 9-01-53
1781	11-30-15	4-09-21	6-14-32	4-14-48		DB 7-14-53
1782	11-30-15	3-26-21	4-29-32	1-20-40		DB 8-10-54
1783	11-30-15	4-20-21	6-30-33			DB 6-30-53
1784	11-30-15	2-23-21	6-30-33	5-06-43		DB 8-10-54
1785	11-30-15	1-14-21	6-30-33	8-19-41		BS 6-01-54 TSC
1786	12-09-15	2-26-21	4-02-32			DB 11-30-54
1787	12-10-15	1-20-21	6-30-33			DB 10-05-54
1788	12-10-15	3-08-17 Sldg				
		1918 Fldg	4-13-32			DB 7-28-54
1789I	12-18-15					CS 5-13-16 DSR 263
1789II	11-22-16	12-22-20	5-06-32			DB 7-15-54
1790I	12-18-15					CS 5-13-16 DSR 264
1790II	11-23-16	1-07-21	6-28-33			DB 8-13-54
1791	12-18-15					CS 5-13-16 DSR 265
1791II	11-25-16	10-07-21	4-13-32	8-22-39		BS 4-28-54 TSC
1792I	12-18-15					CS 5-13-16 DSR 266
1792II	11-25-16	11-09-20	5-11-32			DB 6-16-53
1793	11-25-16	3-24-21	7-12-32	9-15-39		DF 4-28-50
1794	11-29-16	10-17-21	7-12-32			BS 3-19-54 TSC
1795	12-02-16	9-15-21	6-30-33	8-03-49		DB 8-10-54
1796	12-02-16	4-01-21	7-01-32			BS 4-12-54 TSC
1797	12-02-16	9-29-21	6-23-32	10-03-42		DB 8-10-54
1798	12-06-16	10-07-21	5-23-32			BS 6-01-54 TSC
1799	12-13-16	5-11-21	5-04-33			BS 4-12-54 TSC
1800	12-13-16	3-31-21	4-12-32	12-16-40		DB 6-10-53
1801	12-13-16	4-22-21	4-20-33			DB 7-15-54
1802	12-13-16	3-23-21	4-06-32	5-25-49		BS 10-26-53 TSC
1803	12-27-16	5-25-21	6-11-32	3-06-40		BS 3-05-54 TSC
1804	12-27-16	5-25-21	4-20-33	10-08-48		BS 10-26-53 TSC
1805	12-27-16	4-22-21	4-29-32			DB 5-26-53
1806	12-27-16	2-10-21	4-12-32			BS 9-16-53 TSC
1807	12-30-16	2-15-21	5-10-32	5-06-43		DB 8-10-54
1808	12-14-16	4-20-21	4-20-33	3-26-40		BS 5-11-54 TSC
1809	12-14-16	4-22-21	3-29-33	11-18-49		BS 7-07-53 TSC
1810	12-14-16	4-28-21	6-16-33			BS 12-16-52 TSC
1811	12-14-16	4-22-21	6-03-32	8-09-43		BS 6-30-53 TSC
1812	12-26-16	3-04-21	7-07-32			DB 7-23-53
1813	12-26-16	4-01-21	6-03-32	4-09-43		BS 1-12-53 TSC

Car #	Built	Rebuilt-FE	Rebuilt-OM	Steel Plt	Reblt-Other	Disposition
1814	12-26-16	10-28-20	6-16-33	9-15-43		DB 7-23-53
1815	12-26-16	4-01-21	6-16-33	10-20-48		DB 7-07-53
1816	1-15-17	3-12-21	4-13-32	1-09-50		BS 3-04-53 MRW
1817	1-13-17	2-23-21	4-13-32	1-20-40		DB 8-10-54
1818	1-12-17	3-16-21	7-01-32	3-24-49		DB 11-30-54
1819	1-15-17	1-07-21	4-06-32	9-12-41		DB 8-05-54
1820	12-30-16	2-23-21	4-29-32			BS 7-02-54 TSC
1821	12-30-16	3-12-21	4-13-32	9-02-39		BS 7-23-53 TSC
1822	12-30-16	9-15-21	6-16-33	3-18-39		DB 7-07-53
1823	1-12-17	12-31-20	4-24-33	12-05-44		BS 6-16-53 TSC
1824	1-12-17	8-26-21	4-24-33	3-27-43		BS 2-05-54 TSC
1825	1-16-17	4-28-21	3-29-33			DB 7-07-53
1826	1-17-17	3-10-21	3-03-33	12-31-40		BS 5-21-54 TSC
1827	1-17-17	2-01-21	4-24-33	4-04-49		BS 7-26-54 TSC
1828	1-17-17	5-20-21	5-20-32			DB 6-30-53
1829	1-17-17	3-02-21	4-20/24-33			BS 4-07-54 TSC
1830	1-17-17	1-14-21	5-11-32	1-12-43		DB 6-23-53
1831	1-17-17	2-01-21	4-24-33	8-27-40		BS 5-27-54 TSC
1832	1-17-17	8-12-21	7-12/13-32	8-21-44		BS 1-14-53 TSC
1833	1-17-17	11-06-20	6-23-32	8-07-41		BS 12-10-53 TSC
1834	1-24-17	5-26-21	4-02-32	1-25-39		AD 9-19-47 (5-05-47)
1835	1-24-17	1-26-21	3-29-33			DB 7-07-53
1836	1-23-17	2-04-21	6-23-32			DB 5-18-53
1837	1-23-17	2-04-21	6-23-32	9-27-39		BS 2-12-53 TSC
1838	1-29-17	12-14-20	4-20-33	10-30-42		BS 6-02-54 TSC
1839	1-29-17	11-06-20	7-07/12-32			DB 6-23-53
1840	1-29-17	3-28-21	6-01/02-32	3-06-50		BS 1-27-53 TSC
1841	1-29-17	4-09-21	5-06-32	3-06-40		BS 5-29-53 TSC
1842	2-21-17	3-17-21	5-10-32	7-03-43		BS 9-03-53 DPM
1843	2-21-17	2-22-21	5-11-32			DB 5-18-53
1844	2-21-17	4-09-21	5-20-32			BS 4-01-54 TSC
1845	2-21-17	2-15-21	6-10-32	8-19-48		DB 8-05-54
1846	2-21-17	3-18-21	5-10-32			DB 7-23-54
1847	2-20-17	12-30-20	5-20-32	6-11-48		DB 5-26-53
1848	2-20-17	9-29-21	6-23-32	3-27-43		DB 8-13-54
1849	2-20-17	1-07-21	3-29-33			DB 8-13-54
1850	2-20-17	12-13-20	5-06-32			BS 12-18-53 TSC
1851	2-20-17	2-22-21	6-22-32	2-04-43		DB 11-30-54
1852	6-18-17	3-16-21	4-20-33	2-14-40		BS 3-15-54 TSC
1853	6-28-17	10-17-21	6-02/01-32			DB 7-15-54
1854	6-28-17	5-18-21	5-20-31	9-23-42		BS 7-06-54 TSC
1855	6-22-17					CS 11-20-17 MACR 8
PRIVATE	5- -98					DF 8.17.25

2006-2030
Record Card Dates
all 1928

1-04	1-05	1-06	1-07
2006	2008	2009	2011
2007		2010	

1-26	1-27	2-02	2-03
2012	2016	2018	2021
2013	2017	2019	
2014		2020	
2015			

2-04	2-07	2-08	2-09
2022	2023	2025	2026
	2024		

2-11	2-13
2027	2028
2030	2029

LIGHTWEIGHT CARS

Car #	Built	Rebuilt	Rebuilt	Dismantled and Burned
2000	4-03-16 (1)	10-20-21 (2)	1928 (4)	9-27-52
2001	4-03-16 (1)	8-20-21 (2)	1928 (4)	12-20-50
2002	11-15-21	10-10-23 (3)	1928 (4)	12-20-50
2003	11-15-21	10-10-23 (3)	1928 (4)	9-12-52
2004	7-15-26		1928 (4)	12-20-50
2005	7-15-26		1928 (4)	9-12-52

(1) Both RC and DS list 4-03-17 but other company records indicate 1916.
(2) Repaint date.
(3) Repaint date. Re-weighed 11-11-23 after rebuilding.
(4) Toward the end of 1928 all train equipment was removed from 2000-2005 and they were standardized with newly-built 2006-2030.

1	4-25-25			9-21-49
2	4-25-25			9-21-49
3	4-25-25	DE 9-16-32		6-23-49
4	4-25-25	DE 11- -39		11-21-52

2006	12-01-27			9-19-52
2007	12-19-27			11-21-52
2008	12-20-27			9-12-52
2009	12-21-27			9-19-52
2010	12-22-27			9-19-52
2011	12-23-27			5-18-53 (AD 2- -52)
2012	1-02-28			11-21-52
2013	1-03-28			9-12-52
2014	1-04-28			11-21-52
2015	1-05-28			9-19-52
2016	1-06-28			9-19-52
2017	1-09-28			9-12-52
2018	1-10-28			9-17-52
2019	1-11-28			9-19-52
2020	1-12-28			9-17-52
2021	1-13-28			9-19-52
2022	1-16-28			9-17-52
2023	1-17-28			9-17-52
2024	1-18-28			9-12-52
2025	1-19-28			9-17-52
2026	1-20-28			9-19-52
2027	1-23-28			9-17-52
2028	1-24-28			9-12-52
2029	1-25-28			9-17-52
2030	1-26-28			9-12-52

2000-2030 as built could be operated by either one man or two men. Interior arrangements were modified for one-man only operation as follows:

August 1930: 2006-2020, 2023.
February 1932: 2000-2005, 2021-2022, 2024-2030.

SERVICE CARS

Car #	Built	Type	Rebuilt	Disposition
3	5-11-05	Wire Car		DB 7-07-54
4	8-15-05	Wire Car		DB 8-20-52
5	5-28-08	Wire Car		DB 8-14-53
7	11-16-04	Work Car	-? Cab Ext.	DB 5-05-54
8	11-16-04	Work Car	-29 Cab Ext.	DB 5-05-54
9	11-16-04	Work Car		DB 5-05-54
10	11-16-04	Work Car		DB 5-05-54
11	4-21-05	Work Car	9- -10 Cab Ext.; later removed	DB 4-26-54
12	4-21-05	Work Car	12- -11 Cab Ext.	AD 12- -36 (1-09-34)
13	4-14-05	Work Car	-? Cab Ext. ~~1-16-25 Sander Cab; 6-52 removed~~	DB 4-26-54
A13	3-25-12	Work Car	Rebuilt from old Snow Plow 13	DB 9- -36
14	4-13-05	Work Car	10-28-21 Sander Cab	DB 4-26-54
A14	3-20-12	Work Car	Rebuilt from old Snow Plow 14	DF 8-17-25
15	4-12-05	Work Car	12- -16 Cab Ext.	DB 9-20-54
16	4-08-05	Work Car	4-04-17 Cab Ext. 10-28-21 Sander Cab; 6-52 removed	DB 8-20-52
17	6-14-07	Work Car	4-21-17 Cab Ext.	DB 8-18-54
18	6-20-07	Work Car	12- -10 Cab Ext. 10-28-21 Sander Cab	DB 6-10-53
19	7-18-07	Work Car	-? Cab Ext	DB 5-05-54
20	8-05-07	Locomotive		CS 7-01-54 NSP
21	8-23-07	Wrecker-Crane		Dismantled 3-54 at Nicollet Station
22	2-19-06	Snow Plow		DB 8-14-53
23	1-19-07	Snow Plow-Sweeper	1942 Sweeper assembly removed	DB 5-07-53
24	1-19-07	Snow Plow-Sweeper	1942 Sweeper assembly removed	DB 8-14-53
25	11-22-04	Snow Plow	3- -11 Line Tower added	CS 1918 MACR
26	9-10-08	* Shifter Car	3-15-43 New Body	DB 9- -54
27	?	* Shifter Car		DB 1-14-52
28	?	* Shifter Car	3-25-43 New Body	DB 8-18-54

* These three cars were originally cable grip cars built 1890 by LaClede Car Co.; rebuilt 1898 for Selby Hill counterweight system. This system was removed 10-10-06; cars were unaltered except for removal of the counterweight grip.

Car #	Built	Type	Rebuilt	Disposition
29	12-01-08	Snow Plow-Sweeper	1942 Sweeper assembly removed	DB 5-07-53
30	12-01-08	Snow Plow-Sweeper	1942 Sweeper assembly removed	DB 6-02-53
31	12-10-08	Snow Plow-Sweeper	1942 Sweeper assembly removed	DB 5-18-53
32	12-10-08	Snow Plow-Sweeper	1942 Sweeper assembly removed	DB 8-14-53
33	4-22-09	Work Car		DB 4-26-54
34	11-09-05	Baggage Car		DB 7-16-36
35	11-10-09	Rail Grinder	3- -11 Sand Blasting Car	DB 12-31-44
36	3-01-10	Snow Plow		DB 5-07-53
37	3-01-10	Snow Plow		DB 5-18-53
38	3-01-10	Snow Plow		DB 5-18-53
39	1- -11	Kerwin Rail Grinder		DB -52
40	8-24-11	Kerwin Rail Grinder		DB -52
43	11-01-11	Sand Car		DB 4-26-54
44	11-01-11	Sand Car		DB 4-26-54
45	11-01-11	Sand Car		BS 7-06-54 UNK

SERVICE CARS

Car #	Built	Type	Rebuilt	Disposition
46	5-01-12	Work Car		DB 4-26-54
47	5-01-12	Work Car	1945 Dump Car	DB 12-10-52
48	5-01-12	Work Car	10- -12 Line Cab; 1-52 removed	DB 11-21-52
49	2-21-13	Refuse Car		DB 8-10-54
50	4-28/19-13	Crane Car	8-47 New Cab. 3-48 Orton Crane	CS 10- -54 AIS
51	3-09-14	Work Car	4-03-15 Cab Ext.	DB 5-05-54
52	3-09-14	Work Car	? Cab Ext.	DB 7-23-53
53	3-16-14	Work Car		DB 5-05-54
54	3-23-14	Work Car		DB 5-05-54
55	3-28-14	Work Car	3-03-17 Cab Ext.	DB 5-05-54
56	4-2/3-28-14	Work Car		DB 5-05-54
57	3-30-14	Thew Electric Shovel		DB 1952 or about 5-54
58	4-2/12-14	Track Welding Car	1925 Track Dept. Supply Car	DB 4-26-54
	11-15-14	UofM Switch Car		DB 6- -54
59	1-15-15	Sprinkler Car		DB 6-13-52
60	4-06-15	Thew Electric Shovel		DB 1948
61	4-15/12-15	Track Welding Car	1925 Track Dept. Supply Car	DB 7-23-53
62	5-26-15	Work Car		DB 8-10-54
63	5-26-15	Work Car		DB 8-10-54
64	6-01-15	Work Car		DB 8-10-54
65	6-23-15	Work Car		DB 5-05-54
66	6-25-15	Work Car		DB 5-05-54
67	7-02-15	Work Car		DB 5-05-54
68	7-15-15	Work Car		DB 5-05-54
69	7-21/24-15	Work Car		DB 5-05-54
70	7-13-15	Sand Blasting Car		DB 1-12-45
71	?	Pavement Plow		DB 1952
72	5-01-17	Wire Car		DB 7-07-54
73	5-02-17	Thew Electric Shovel		DB about 5-54
74	5-8/15-17	Brownhoist Yard Crane		DB 10- -54
75	12-10-17	Snow Plow		BS 5-20-54 DPM
76	12-22-17	Snow Plow		BS 5-20-54 DPM
77	1-07-18	Snow Plow		BS 5-20-54 DPM
78	1-15-18	Snow Plow		BS 5-20-54 DPM
79	1-28-18	Snow Plow		BS 5-20-54 DPM
80	2-04-18	Snow Plow		DB 6-02-53
81	3-01-18	Snow Plow		BS 5-20-54 DPM
82	3-08-18	Snow Plow		DB 6-02-53
83	2-15-27	Differential Crane Car		DB 10- -54
94	6-15-29	Speeder Electric Shovel		CS 1954 Gravel Pit in Wisconsin

Shop Trailers Disposition

84	Dismantled, box sold 11-52	89	DB 4-23-53
85	DB 11-21-52	90	DB 5-28-42
86	Dismantled, box sold 11-52	91	DB 1952
87	DB 1952	92	DB 1952
88	Destroyed 12-15-39	93	Dismantled, box sold 11-52

PCC CARS

Car	In Oper.	Sold
299	Received 1-17-45 2-23-45	3-05-54
300	12-20-46	1-07-54
301	12-19-46	2-11-54
302	12-19-46	12-28-53
303	12-19-46	1-06-54
304	12-19-46	10-15-53
305	12-19-46	2-25-54
306	12-19-46	2-10-54
307	12-19-46	12-01-53
308	12-19-46	12-03-53
309	12-19-46	12-30-53
310	12-21-46	1-14-54
311	12-21-46	2-25-54
312	12-19-46	2-09-54
313	12-??-46	1-22-54
314	12-23-46	1-15-54
315	12-21-46	12-18-53
316	12-23-46	2-26-54
317	12-29-46	12-10-53
318	12-26-46	3-03-54
319	12-26-46	12-17-53
320	12-26-46	8-25-53
321	12-28-46	8-24-53
322	1-02-47	10-22-53
323	12-30-46	11-06-53
324	1-03-47	8-25-53
325	1-04-47	10-16-53
326	1-02-47	8-21-53
327	1-07-47	8-31-53
328	1-05-47	10-19-53
329	1-10-47	8-28-53
330	1-05-47	8-26-53
331	1-04-47	11-13-53
332	1-05-47	8-26-53
333	1-07-47	10-26-53
334	1-06-47	10-20-53
335	1-08-47	8-28-53
336	1-02-47	11-13-53
337	1-13-47	8-24-53
338	1-16-47	10-19-53
339	1-17-47	10-30-53
340	8-21-47	9-21-53
341	8-21-47	9-18-53
342	8-19-47	9-18-53
343	8-18-47	9-17-53
344	8-21-47	9-17-53
345	8-18-47	4-09-54
346	8-19-47	4-07-54
347	9-05-47	4-08-54
348	8-19-47	4-06-54
349	8-25-47	4-08-54

Car	In Oper.	Sold
350	8-25-47	5-07-54
351	8-20-47	4-06-54
352	8-26-47	5-11-54
353	8-28-47	4-09-54
354	9-05-47	5-12-54
355	9-06-47	5-07-54
356	10-14-47	4-07-54
357	9-09-47	5-10-54
358	9-08-47	5-10-54
359	9-04-47	5-11-54
360	9-08-47	7-28-53
361	9-06-47	8-20-53
362	9-12-47	8-18-53
363	9-15-47	8-21-53
364	9-12-47	8-19-53
365	9-17-47	2-17-54
366	9-16-47	2-12-54
367	9-19-47	2-10-54
368	9-18-47	10-22-53
369	9-20-47	2-09-54
370	9-22-47	1-20-54
371	9-25-47	11-12-53
372	9-29-47	10-20-53
373	10-01-47	2-17-54
374	10-03-47	11-19-53
375	10-02-47	12-03-53
376	10-03-47	11-03-53
377	10-08-47	2-19-54
378	10-08-47	11-18-53
379	10-08-47	1-26-54
380	10-13-47	12-08-53
381	10-04-47	1-14-54
382	10-16-47	1-20-54
383	10-09-47	10-21-53
384	10-13-47	11-10-53
385	10-10-47	11-03-53
386	10-15-47	12-04-53
387	10-13-47	2-12-54
388	10-17-47	2-18-54
389	10-20-47	1-29-54

PCC CARS

Car	Received	In Oper.	Sold
390	6-27-49	7-15-49	1-07-54
391	6-30-49	7-15-49	10-05-53
392	6-30-49	7-16-49	10-17-53
393	7-01-49	7-09-49	10-02-53
394	7-01-49	7-09-49	2-12-54
395	7-01-49	7-08-49	11-05-53
396	7-01-49	7-09-49	1-22-54
397	7-01-49	7-11-49	11-23-53
398	7-15-49	7-21-49	12-10-53
399	7-15-49	7-20-49	12-30-53
400	7-12-49	7-25-49	9-29-53
401	7-14-49	7-20-49	10-22-53
402	7-14-49	7-22-49	12-15-53
403	7-15-49	7-??-49	1-06-54
404	7-15-49	7-20-49	12-01-53
405	7-15-49	7-18-49	10-20-53
406	7-15-49	7-18-49	1-26-54
407	7-15-49	7-??-49	12-18-53
408	7-18-49	7-22-49	10-12-53
409	7-18-49	7-20-49	10-14-53
410	7-18-49	7-25-49	10-06-53
411	7-18-49	7-21-49	11-10-53
412	7-18-49	7-23-49	10-06-53
413	7-18-49	7-25-49	11-20-53
414	7-18-49	7-23-49	10-07-53
415	5-26-49	6-04-49	11-09-53
416	5-31-49	6-14-49	10-27-53
417	5-31-49	6-14-49	10-27-53
418	6-01-49	6-08-49	10-29-53
419	6-01-49	6-09-49	10-28-53
420	6-08-49	6-15-49	10-13-53
421	6-08-49	6-14-49	10-09-53
422	6-09-49	6-13-49	10-12-53
423	6-09-49	6-16-49	11-06-53
424	6-14-49	6-16-49	11-09-53

Car	In Oper.	Sold
425	6-23-49	10-13-53
426	6-18-49	12-01-53
427	6-20-49	12-18-53
428	6-28-49	12-17-53
429	6-22-49	12-15-53
430	6-27-49	1-15-54
431	6-27-49	11-16-53
432	6-27-49	10-08-53
433	7-14-49	3-04-54
434	7-05-49	12-28-53
435	7-04-49	11-04-53
436	6-28-49	10-01-53
437	6-28-49	10-14-53
438	7-04-49	2-18-54
439	7-04-49	11-17-53

St. Louis Car Company Dates

Numbers	Ordered	Shipped
299	12-18-44	1-13-45
300-339	1-9-45	11-25-46/1-3-47
340-389	8-7-45	7-30-47/10-4-47
390-439	10-?-47	5-20-49/7-14-49

1600-1625 Renumbering

Data Sheet: Rebuilt Dates for Motors and Trailers are identical:

1600-200	7-12-21	1613-213	8-26-21
1601-201	7-13-21	1614-214	8-26-21
1602-202	7-13-21 (7-14)	1615-215	8-27-21 (8-26)
1603-203	7-16-21	1616-216	9-26-21
1604-204	7-28-21	1617-217	9-26-21
1605-205	7-29-21	1618-218	9-10-21
1606-206	7-30-21	1619-219	9-25-21
1607-207	7-31-21 (7-30)	1620-220	9-8-21
1608-208	8-13-21	1621-221	9-10-21
1609-209	8-13-21	1622-222	9-24-21
1610-210	8-13-21	1623-223	9-25-21
1611-211	8-13-21	1624-224	9-10-21
1612-212	8-26-21	1625-225	10-11-20

( ) = Record Card differences

Record Card Dates 1921		"Front Exit" *	"Trailer added"	"Front Exit with Trailer"	Repaint
1600	Card Missing	•			
1601		~~3-2~~ 7-10 •	7-13		2-22
1602		~~5-18~~ 7-6 •	7-13		5-12
1603		~~7-2~~ 7-2 •	7-16		6-10
1604		~~5-27~~ 7-28 •	7-28		5-26
1605		~~7-2~~ 7-2 •	7-29		6-10
1606	#518 12-2-20	~~12-13-20~~		7-30	1) 11-22-20 # 2) 3-29-21
1607		7-30			6-10
1608		~~4-9~~ 7-1			6-17
1609		~~2-26~~		8-13	2-21
1610		~~5-12~~		8-13	5-5
1611		3-17			3-15
1612		~~3-24~~		8-26	3-21
1613		~~3-3~~		8-26	3-1
1614				8-26	6-27
1615				8-26	7-7
1616		4-6			4-1
1617		8-23			7-14
1618		~~2-21~~ 7-2			2-11
1619		~~4-29~~ 7-1			1) 4-25 2) 6-17
1620		7-1			6-17
1621		~~5-7~~ 7-1			1) 5-3 2) 6-17

1600-1625 Renumbering

Record Card Dates 1921	"Front Exit" *	"Trailer added"	"Front Exit with Trailer"	Repaint
1622			8-26	6-27
1623	~~4-27~~ 7-1			1) 4-25 2) 6-17
1624	~~5-21~~ 7-10			5-18
1625	5-18			1) 1-19 2) 7-7

* The lined-thru date was originally written in ink on the card, then lightly erased, and written over in ink with the later date. The original date can be made out using a magnifying glass. Note the original date coincides with FE dates below.

			1st Repaint	2nd Repaint
1590	10-11-20 ✓		9-23-20	none
1599	3-2 ✓		8-31-20	6-27-21
1626	5-27 ✓		1-12-21	7-6-21
1630	12-13-20 ✓		12-2-20	7-7-21
1633	4-9		none	none
1640	2-26		12-27-20	7-14-21
1642	5-12		1-19-21	7-6-21
1644	3-17		6-30-20	7-14-21
1650	3-24		none	6-27-21
1655	3-3		1-18-21	7-14-21
1669	4-6		1-11-21	7-14-21
1670	2-21		none	5-27-21
1671	4-29		11-12-20	none
1699	5-7		none	none
1701	5-21		9-2-20	6-27-21
1766	4-27		none	none

My interpretation of the dates:

1600-1625:

(1) The "erased" (lined-thru) FE Date is that of the car's first or original number.

(2) The written over date can be (a) rebuilt with FE, (b) rebuilt with FE and for pulling Trailers, (c) Trailer Rebuilding date. "Trailer added" or "Front Exit with Trailer" is Trailer Rebuilding date. The "Repaint" date provides the more exact date.

1590 various thru 1766:

(1) FE Date is correct.

(2) The 2nd Repaint Date is that when the car was re-numbered and re-fitted for pulling Trailers.

1600-1625 Renumbering
Results

From	To
1590 I FE 10-11-20	1625 II TR/RP 7-7-21 (I had typed 7-2-21; source ?.)
1625 I FE 5-18-21	1602 II TR 7-6-21
1602 I —	1590 II FE, assume 7-6-21 (same as 1602 II)
1599 I FE 3-2-21	1601 II TR 7-10-21
1601 I —	1599 II FE/RP 6-27-21
1603 FE & TR 7-2-21	—
1626 I FE 5-27-21	1604 II TR ?-?-21
1604 I —	1626 II FE/RP 7-6-21
1605 FE&TR 7-2-21 (RP 6-10-21)	—
1630 I FE 12-13-20	1606 II TR ?-?-21
1606 I —	1630 II FE/RP 7-7-21
1607 FE&TR/RP 6-10-21	—
1633 I FE 4-9-21	1608 II TR 7-1-21 (RP 6-17-21)
1608 I —	1633 II FE ?-?-21 (use 1608 II RP date?)
1640 I FE 2-26-21	1609 II TR ?-?-21
1609 I —	1640 II FE/RP 7-14-21
1642 I FE 5-12-21	1610 II TR ?-?-21
1610 I —	1642 II FE/RP 7-6-21
1644 I FE 3-17-21	1611 II TR ?-?-21
1611 I —	1644 II FE/RP 7-14-21
1650 I FE 3-24-21	1612 II TR ?-?-21
1612 I —	1650 II FE/RP 6-27-21
1655 I FE 3-3-21	1613 II TR ?-?-21
1613 I —	1655 II FE/RP 7-14-21
1614 FE&TR/RP 6-27-21	—
1615 FE&TR/RP 7-7-21	—

1600-1625 Renumbering Results

From	To
1669 I FE 4-6-21	1616 II ?-?-21
1616 I —	1669 II FE/RP 7-14-21
1617 FE&TR/RP 7-14-21	—
1670 I FE 2-21-21	1618 II TR 7-2-21
1618 I —	1670 II FE/RP 5-27-21
1671 I FE 4-29-21	1619 II TR/7-1-21 (RP 6-17-21)
1619 I —	1671 II ?.-?.-21 (Use 1619 II RP date?.)
1620 FE&TR 7-1-21 (RP 6-17-21)	—
1699 I FE 5-7-21	1621 II TR 7-1-21 (RP 6-17-21)
1621 I —	1699 II FE ?.-?.-21 (Use 1621 II RP date?.)
1622 FE&TR/RP 6-27-21	—
1766 I FE 4-27-21	1623 II TR 7-1-21 (RP 6-17-21)
1623 I —	1766 II FE ?.-?.-21 (Use 1623 II RP date?.)
1701 I FE 5-21-21	1624 II TR 7-10-21
1624 I —	1701 II FE/RP 6-27-21

I wonder if the Motor Cars were operated singly after rebuilding (late May - mid July) until the Trailers were rebuilt (mid July - late September) and added.

Aurora Elgin & Chicago RR
208, 210, 214 sold 1918 to the Youngstown & Southern Ry as their 16, 18, 20 resp.

212 had been rebuilt double end in Aurora shops 19??. It was not on the list of cars retained by the successor Aurora Elgin & Fox River Elec. Co. in 1923

5. DISPOSITION OF EQUIPMENT

1903

Car 859 was wrecked in a collision with a freight train and subsequently scrapped.

1906

Cars 1108-1111 were sold in June to the Duluth St. Ry. becoming their 179-182.

1912

Cars 868-869 were rebuilt to special double end cars for and sold to Duluth St. Ry. as their 255-256 in December, 1912.

1913

Cars 782-785 were sold during May to the Aurora Elgin & Chicago R.R. The A.E. & C. later sold three of them to the Youngstown & Southern Ry.

TCRT #	AE&C #	Y&S #
782	208	16
783	210	18
784	212	—
785	214	20

1916

Car 952 was stripped of motors and controller for use as a Trailer, re-numbered 1590A and coupled to car 1590. In 1921 it was again re-numbered, to 225.

1917

Cars 988-991 and 1672-1673 were leased to Duluth St. Ry. from December, 1917, through November, 1920. 988-991 were DSR 280-283 and 1672-1673 were DSR 279 and 284.

1918

Cars 763, 765, 768-775, 777, 779, 786, 788, 797-799, 803-805, 807, 808, 810-812 were sold to the Seattle Municipal Ry. during October. TCRT rebuilt them with front exit folding doors, repainted and re-numbered them to 300-324. (Seattle later re-numbered them to 800-824; they were scrapped during 1939 and 1940.)

Cars 817-831 were sold in May, and 766-767, 776, 778 and 787 in July, to the Tacoma (Wash.) Municipal Belt Line Ry.

Car 899 was sold to the Cripple Creek Coal Co. of Illinois.

By a letter agreement dated October 19, 1917, car 1855 and Snow Plow 25 were sold to the Minneapolis, Anoka & Cuyuna Range Ry. 1855 was delivered immediately in 1917 but as 25 was to be placed in serviceable condition before delivery, this work was not completed until early 1918 and the car was then delivered.

Cars 1202, 1204, 1212, 1231, 1232, and 1234 were sold to the Duluth St. Ry. and their 289-294.

1920

20 car bodies (no trucks, motors or controllers) were sold to the Winnipeg Electric Co., Winnipeg, Canada, to replace cars lost in a 1919 carhouse fire. July: cars 832, 845, 846, 833-842 and 844; August: cars 848-853. These cars were re-numbered 800-838, even numbers only, in Winnipeg.

Car 1114 was wrecked on April 11th; a broken gear case cover caused the car's derailment at E. 7th St. and Barclay Ave., St. Paul, at 1:15 A.M., and it turned over into a ditch damaging the body so badly the car had to be scrapped.

Car 1258 was destroyed by fire at Duluth Ave. Station.

1925

The Snelling Shops Storage Shed was destroyed by fire on August 17th along with these cars: Horse Car relic (SPCR #1), the Private Car, 612, 624-626, 860-865, 871-874, 877, 879, 947, 951, Work Car A14, Supply Cars 1 (single truck) and 2 (double truck, Northern Car Co., 1892). Work Car 15 was damaged in the fire but as it had a steel underframe it was rebuilt during November, 1925.

1933

Car 1006 was destroyed by fire at Nicollet Station.

Trailer 225 was damaged by fire but was not scrapped until 1935.

1934

Work Car 12 was damaged by fire in January and dismantled in 1936.

The 95 oldest cars were sold for scrap: 764, 780, 781, 800-802, 806, 809, 814-816, 843, 854-858, 866-867, 870, 878, 880-895, 900-946, 948-950, and 953-960. The cars were moved under their own power to Duluth Ave. Station in St. Paul where a carhouse track connected with the C. St. P. M. & O. Ry.; they were then moved by railroad, all equipment complete, to the Paper, Calmenson & Co. yard on E. 7th St. where they were burned and the scrap metal salvaged.

1936

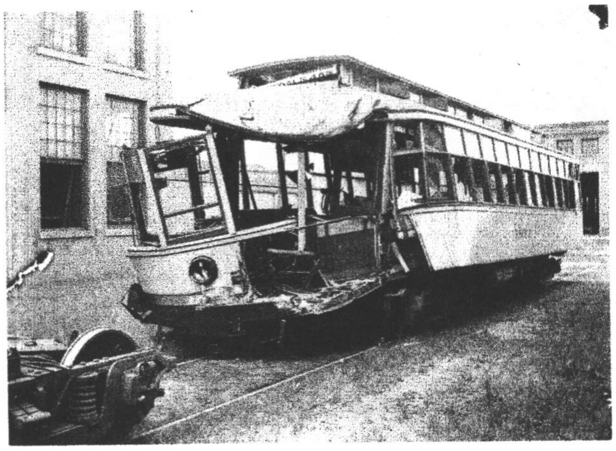
173 obsolete cars, out of service for about five years, were sold for scrap: 896-897, 961-1005, 1007-1107 and trailers 200-224. Paper, Calmenson & Co. scrapped these cars in the identical manner used in 1934.

Dismantled and burned: Supply Car 2 (ex 762) and Baggage Car 34.

Cars 1610 and 1629 were wrecked and burned in a head-on collision on the gauntlet track bridge over the C. St. P. M. & O. Ry. in Hazel Park on the Mahtomedi line. The remains were hauled to the Snelling Shops and dismantled.

1937

Car 1699 was wrecked in a collision with a steam locomotive of the C. M. & St. P. Ry. at 49th St. and Minnehaha Ave., Minneapolis, and was damaged so badly it had to be scrapped.



Left: Remains of 1610 or 1629 at the shops, 1936. (TCRT)
Above: Wreckage of 1699 at the shops, 1937. (TCRT)

1938

33 cars were dismantled and burned: 1112-1113, 1115-1123, 1145, 1150-1163, 1135, 1139, 1255-1256, 1259 and 1264-1265.

1939

22 cars were dismantled and burned: 1124-1128, 1130-1133, 1137-1138, 1140-1144, 1164-1165, 1257, 1260 and 1262-1263.

Flat Trailer 88 was destroyed.

1940

Car 1674 was destroyed by fire in the erecting shop at the Snelling Shops.

Car 1179 was wrecked and burned in a collision with a gasoline tank truck on the N.W. Terminal line in Minneapolis.

1941

Cars 813, 847, 875, 876, 898 and 1146-1149 were dismantled and burned.

1942

Gondola Trailer 90 was scrapped.

1944

Sand Blast Car 35 was dismantled and burned.

1945

Sand Blast Car 70 was dismantled and burned.

Car 1275 was wrecked at 34th St. and the Harriet Right-of-Way in Minneapolis.

1946

Car 1353 was dismantled and burned; it had been damaged in a wreck during 1943 and in storage since then.

1947

Car 1834 was wrecked in a collision with a locomotive at 49th St. and Minnehaha Ave., Minneapolis, and damaged so badly it had to be scrapped.

Car 1449 was wrecked and burned in a collision with a U.S. Mail truck at Selby Ave. and Pascal St. in St. Paul. Supply Car 95 (ex 1134) was dismantled and burned. Car 1129 was dismantled and burned.

With the coming of the PCC cars, the first scrapping of surplus front exit-gate cars began. The following cars were dismantled and burned: 1331, 1334, 1361, 1363, 1365, 1372, 1414, 1428, 1434, 1445, 1447, 1456, 1477, 1481, and 1484.

1948

Car 1330 was dismantled and burned.

1949

The bodies of cars 1354, 1374, and 1476 were made into storage sheds for the Snelling Track Dept. yard.

The following cars were dismantled and burned: 1-3, 1332, 1333, 1336, 1337, 1344, 1352, 1356, 1358-1360, 1371, 1373, 1377-1380, 1399, 1405, 1406, 1411-1413, 1421, 1431, 1432, 1435, 1438, 1442-1444, 1452, 1453, 1455, 1458, 1463, 1471, 1474, 1486, 1493, and 1547.

1950

Car 1793 was destroyed by fire at the Snelling Station.

Cars 2001, 2002 and 2004 were dismantled for parts.

1951

Car 1605 was wrecked in a tornado at 62nd St. and Nicollet Ave., Minneapolis (July) and subsequently scrapped.

Cars 1198 and 1773 were so badly damaged in a collision (one car derailed directly in front of the other which was heading in the opposite direction and ran into the side of the derailed car) on 42nd Ave. So. at 53rd St., Minneapolis, that both were dismantled and burned.

Cars 1329, 1341, 1350, 1364, 1368, 1381, 1400, 1419, 1427, 1542, 1555 and 1563 were dismantled and burned.

1952

Car 1655 was damaged in an accident, then dismantled and burned.

Car 1507 was destroyed by an electrical fire on University Ave., St. Paul.

Car 2011 was badly damaged by an electrical fire on Franklin Ave., Minneapolis, and was scrapped in 1953.

The following car bodies were sold to the Transportation Sales Co.: 1235, 1553, 1597, 1723, 1735, 1749, 1751, 1771 and 1810.

The following cars were dismantled and burned: 4, 1136, 1230, 1247, 1254, 1272-1274, 1276-1292, 1335, 1338-1340, 1342, 1343, 1345-1348, 1351, 1355, 1357, 1362, 1366, 1367, 1369, 1370, 1375, 1376, 1383, 1401, 1403, 1404, 1407-1410, 1416, 1418, 1422, 1423, 1426, 1429, 1436, 1439, 1457, 1459-1461, 1472, 1478, 1483, 1514, 1534, 1612, 1613, 1728, 1731, 1774, 2000, 2003, 2005-2010, 2012-2030; also Wire Car 4, Work Car 16, Shifter Car 27, Rail Grinders 39-40, Work Cars 47-48, Sprinkler Car 59, Electric Shovels 57 and 60, Pavement Plow 71, Shop Trailers 84-87 and 91-93, and Rail Grinder 96 (ex 1261).

1953

Given to New England Electric Railway Historical Society's Seashore Electric Ry.: car 1267.

Body given to Sacred Heart School, Robbinsdale: car 1268.

Bodies sold to D.P. Mikkelson: cars 1208 and 1842.

Body given to Mr. Weisman: car 1780.

Bodies sold to Mr. Weisner: cars 1529, 1541, 1652, 1736, 1737 and 1816.

Bodies sold to Transportation Sales Co.: 1174, 1176, 1197, 1199, 1201, 1203, 1211, 1213, 1222, 1224, 1227, 1239, 1244, 1384, 1388, 1390, 1394, 1396, 1397, 1441, 1454, 1462, 1465, 1466, 1469, 1490, 1496, 1497, 1501, 1504, 1505, 1508, 1516-1519, 1535, 1538, 1540, 1543, 1545, 1550, 1557, 1565, 1566, 1571, 1575, 1578, 1579, 1581, 1582, 1585-1589, 1592, 1595, 1596, 1603, 1620, 1627, 1634, 1648, 1650, 1651, 1653, 1658, 1662, 1663, 1666, 1668, 1673, 1677, 1679, 1684, 1687, 1691, 1713, 1714, 1724, 1730, 1745, 1748, 1750, 1753, 1763, 1766, 1769, 1776, 1777, 1802, 1804, 1806, 1809, 1811, 1813, 1821, 1823, 1832, 1833, 1837, 1840, 1841 and 1850.

Dismantled and burned: 1169, 1171-1173, 1177, 1187-1189, 1191, 1194-1196, 1206, 1217, 1225, 1226, 1228, 1229, 1246, 1248-1253, 1271, 1317, 1318, 1386, 1387, 1391-1393, 1395, 1398, 1417, 1420, 1425, 1430, 1437, 1446, 1448, 1451, 1464, 1467, 1475, 1479, 1480, 1485, 1489, 1491, 1498, 1500, 1502, 1503, 1510, 1520-1524, 1526-1531, 1537, 1548, 1552, 1554, 1562, 1567, 1569, 1572, 1591, 1598, 1600, 1601, 1609, 1611, 1614, 1618, 1622-1624, 1630, 1631, 1633, 1635, 1636, 1638, 1640, 1641, 1643, 1644, 1654, 1657, 1659, 1660, 1664, 1670, 1681, 1683, 1689, 1690, 1693, 1695-1697, 1702-1704, 1709, 1711, 1712, 1717-1719, 1722, 1729, 1734, 1738-1743, 1747, 1754, 1772, 1779-1781, 1783, 1792, 1800, 1805, 1812, 1814, 1815, 1822, 1828, 1830, 1835, 1836, 1839, 1843, and 1847; also Wire Car 5, Sand Car 18, Snow Plows 22-24, 29-32 and 36-38, Work Car 52, Supply Car 61, Snow Plows 80 and 82, and Shop Trailer 89.

1954

Given to Minnesota Railfans' Assn.: car 1300.

Sold complete to Northern States Power Co.: Electric Locomotive 20.

Sold complete to American Iron & Supply Co., Minneapolis: Crane Car 50.

Body sold: Sand Car 45.

Sold to a gravel pit in Wisconsin: Electric Shovel 94.

Body sold or given to Gun Club by or for Mr. Larrick: car 1628.

The University of Minnesota Switch Car was moved under its own power to Snelling Shops, then dismantled and burned by TCRT.

Bodies sold to D.P. Mikkelson: 1200, 1303, 1354 storage shed, 1374 storage shed, 1476 storage shed, 1577, 1615, 1692, 1706, Snow Plows 75-79 and 81, and Supply Car 97 (ex 1349).

Bodies sold to Transportation Sales Co.: 1167, 1168, 1175, 1186, 1209, 1214, 1215, 1218, 1237, 1238, 1241-1243, 1245, 1293, 1295, 1302, 1305, 1308, 1309, 1310, 1314, 1326, 1385, 1402, 1415, 1433, 1440, 1450, 1468, 1470, 1473, 1487, 1492, 1495, 1499, 1506, 1509, 1512, 1513, 1515, 1544, 1551, 1556, 1560, 1561, 1570, 1573, 1574, 1576, 1580, 1583, 1584, 1590, 1593, 1594, 1602, 1604, 1606-1608, 1616, 1626, 1632, 1637, 1639, 1647, 1649, 1661, 1669, 1675, 1676, 1680, 1685, 1688, 1694, 1698, 1701, 1705, 1710, 1715, 1716, 1725, 1726, 1732, 1752, 1755-1759, 1778, 1785, 1791, 1794, 1796, 1798, 1799, 1803, 1808, 1820, 1824, 1826, 1827, 1829, 1831, 1838, 1844, 1852 and 1854.

Dismantled and burned: 1166, 1170, 1178, 1180-1185, 1190, 1192, 1193, 1205, 1207, 1210, 1216, 1219-1221, 1223, 1233, 1236, 1240, 1266, 1269, 1270, 1294, 1296-1299, 1301, 1304, 1306, 1307, 1311-1313, 1315, 1316, 1319-1325, 1327, 1328, 1382, 1389, 1424, 1482, 1488, 1494, 1511, 1525, 1532, 1533, 1536, 1539, 1546, 1549, 1558, 1559, 1564, 1568, 1599, 1617, 1619, 1621, 1625, 1642, 1645, 1646, 1656, 1665, 1667, 1671, 1672, 1678, 1682, 1686, 1700, 1707, 1708, 1720, 1721, 1727, 1733, 1744, 1746, 1760-1762, 1764, 1765, 1767, 1768, 1770, 1775, 1782, 1784, 1786-1790, 1795, 1797, 1801, 1807, 1817-1819, 1825, 1845, 1846, 1848, 1849, 1851 and 1853; also Wire Car 3, Work Cars 7-11 and 13-15, Work Cars 17 and 19, Wrecker 21, Shifter Cars 26 and 28, Work Car 33, Sand Cars 43 and 44, Work Cars 46 and 49, Work Cars 51 and 53-56, Supply Car 58, Work Cars 62-69, Wire Car 72, Electric Shovel 73, Yard Crane 74 and Crane Car 83.

DISPOSITIONS
SUPPLEMENTAL INFORMATION

1903

859 was wrecked in a collision with a freight train and subsequently scrapped.

1912

868-869 were rebuilt to a special double-end design for service on Duluth St. Ry.'s "Highland Ave." line becoming DSR 255-256.

1913

782-785 were sold in May to the Aurora, Elgin & Chicago Railroad as their 208,210,212,214 respectively. The AE&C RR later sold 208,210,214 to the Youngstown & Southern Railway as their 16,18,20 respectively.

1917

988-991 and 1672-1673 were leased to the Duluth St. Ry. from December 1917 through November 1920. 988-991 were DSR 280-283 and 1672-1673 were DSR 279,284.

1918

763,765,768-775,777,779,786,788,797-799,803-805,807,808,810-812 were sold during October to the Seattle Municipal Railway. TCRT rebuilt them with front-exit folding doors and steps, repainted and renumbered them to 300-324. Seattle later renumbered them to 800-824; they were scrapped during 1939-1940.

817-831 were sold in May, and 766-767,776,778,787 in July to the Tacoma Municipal Belt Line Railway. [redacted] The cars were numbered 1-20 in Tacoma.

899 was sold to the Cripple Creek Coal Company of Illinois. The coal mine was located at Bryant, Illinois. Former TCRT General Manager Willard J. Hield was an official of the coal company. TCRT billed the Cripple Creek Coal Co. $80,372 in August 1918 for the electrification of their coal mine trackage. The car itself was billed to Willard J. Hield in October 1918 for $4,500.

By letter agreement dated 10-19-1917 Passenger Car 1855 and Snow Plow 25 were sold to the Minneapolis, Anoka & Cuyuna Range Railway. 1855 was delivered immediately in 1917 but as 25 was to be placed in serviceable condition before delivery, this work was not completed until early 1918 and the car was then delivered.

1920

Twenty carbodies (no trucks, motors or controllers) were sold to the Winnipeg Electric Company, Winnipeg, Canada, to replace cars lost in a 1919 carhouse fire. 832,845,846,833-842,844 were shipped in July. 848-853 were shipped in August. These cars were rebuilt in Winnipeg and renumbered 800-838, even numbers only.

1114 was wrecked April 11th. A broken gear case cover caused the car's derailment 1:15 a.m. on E. 7th St. at Barclay Ave., St.Paul. The car turned over into a ditch badly damaging the carbody. The equipment data sheet states "damaged in collision & taken out of service". It appears that the remains were placed in the Snelling Car Storage Shed.

1920

1258 was destroyed by a heater fire in the yard at Duluth Ave. Station.

1925

The Snelling Car Storage Shed was destroyed by fire August 17th. This caused the destruction of these cars: horsecar relic (SPCR 1), Private Car, 612,624-626,860-865,871-874,877,879,947,951, Work Car A14, Supply Cars 1 (single-truck) and 2 (double-truck, ex SPCR 540). Work Car 15 was damaged but as it had a steel underframe it was rebuilt during November 1925. A photograph of the site after the fire show the remains of a steel underframe car. All of the cars listed foregoing (except Work Car 15) had wood underframes. I am speculating that this steel underframe car was 1114 (see 1920 foregoing).

1933

1006 was destroyed by fire in the yard at Nicollet Station.

Trailer 225 was damaged by fire but not scrapped until 1935.

1934

Work Car 12 was damaged by fire in January. The underframe was sandblasted and stored in the Mechanical Dept. storage building. The trucks and motors were sold for scrap.

The 95 oldest cars were sold for scrap: 764,780,781,800-802,806,809,814-816,843,854-858,866,867, 870,878,880-895,900-946,948-950,953-960. The cars were moved under their own power to Duluth Ave. Station in St.Paul where a carhouse track connected with the C.StP.M.&O. Ry. They were then moved by railroad, all equipment complete, to the Paper, Calmenson & Company yard on E. 7th St. where they were dismantled and burned, and the scrap metal salvaged. Based on one photograph it appears that at least one carbody was sold and an interior number board from 814 has survived.

1936

173 obsolete cars, out of service for about five years, were sold for scrap: 896-897,961-1005, 1007-1107 and trailers 200-224. Paper, Calmenson & Company dismantled and burned these cars in the identical manner used in 1934. Trucks from 200-224 were replaced with spare Brill and Baldwin trucks plus the Bemis trucks from Work Car A13 when the trailers were moved for scrapping.

1136 was removed from service and retained for use as the Fair Grounds Office Car. No physical changes were made to the exterior or interior except for the removal of some seat frames so electric strip heaters could be installed.

1610 and 1629 collided head-on on the gauntlet track over the C.StP.M.&O.Ry. bridge in Hazel Park on the "Mahtomedi" line. Both caught fire and burned to the underframe. The underframes were sandblasted and stored in the Mechanical Dept. storage building. Trucks and motors were retained for spares.

1937

1699 was wrecked in a collision with a steam locomotive of the C.M.StP.&P.Ry. at 49th St. and Minnehaha Ave., Minneapolis.

1938

33 cars were dismantled and burned: 1112-1113,1115-1123,1135,1139,1145,1150-1163,1255-1256,1259, 1264-1265.

1939

22 cars were dismantled and burned: 1124-1128,1130-1133,1137,1138,1140-1144,1164-1165,1257,1260, 1262,1263.

1940

1674 was destroyed by fire in the Snelling Erecting Shop while undergoing rehabilit

1179 was wrecked and burned in a collision with a gasoline tank truck on the "N.W.
in Minneapolis.

Newspaper dated
4-24-1939 shows
High Speed Suburban
cars being burned.
(Previous day ?)

1941

813,847,875,876,898,1146-1149 were dismantled and burned.

1945

1275 was caught between two other cars in a collision on the Harriet Right-of-Way at 34th St.

1946

1353 was dismantled and burned; it had been damaged in a wreck in 1943 and in storage since then.

1947

1449 was wrecked and burned in a collision with a U.S. Mail truck at Selby Ave. and Pascal St., St.Paul.

1834 was wrecked in a collision with a steam locomotive of the C.M.StP.&P. Ry. at 49th St. and Minnehaha Ave., Minneapolis.

1948

1330's front platform was completely demolished in an accident; it was then dismantled and burned.

1949

1337 was rear-ended by 1281. 1281 was repaired. 1337 was dismantled and burned.

1431 was damaged by a motorman's cab fire on the "Selby-Lake" line; then dismantled and burned.

1444 was damaged in an accident in April; dismantled and burned in August.

1950

1793 was destroyed by an electrical fire in the Snelling Station yard.

1951

1605 was blown over by a tornado at the 62nd St. and Nicollet Ave. loop and badly damaged.

1951

1198 derailed directly in front of 1773 heading in the opposite direction on 42nd Ave. S. at 53rd St., Minneapolis. Both cars were badly damaged in the resulting collision.

1613 was rear-ended by 1319 on the Harriet Right-of-Way in December. 1319 was repaired. 1613 was dismantled and burned in April 1952.

1952

1507 was destroyed by an electrical fire on University Ave., St.Paul.

1612 and 1728 were damaged in a collision caused by an open switch at 27th Ave. S. and Lake St., Minneapolis.

2011 was damaged by an electrical explosion and fire on the "34th Ave. So." at Franklin Ave., Minneapolis.

1953

The body of 1268 was given to the Sacred Heart School, Robbinsdale.

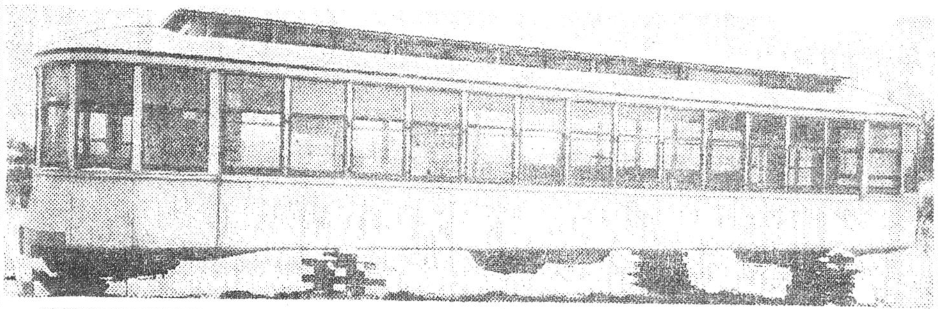
1954

The body of 1628 was either sold to given to a Gun Club by or for Mr. Larrick.

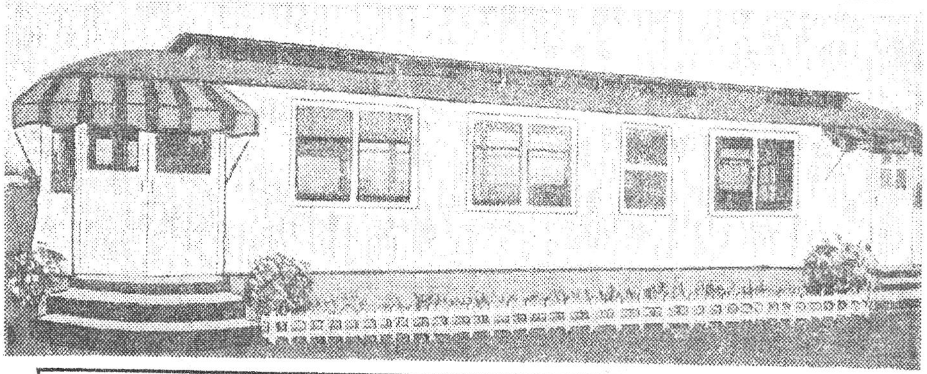
The University of Minnesota Switch Car was moved under its own power to the Snelling Shops, then dismantled and burned by TCRT.

STREET CAR BODIES—$395

DELIVERED FREE UP TO 100 MILES



ACTUAL PHOTOGRAPH OF STREET CAR READY FOR DELIVERY



THIS IS WHAT HAS ACTUALLY BEEN DONE WITH ONE OF OUR STREET CAR BODIES
With a little time and effort you can easily make this into a $4,500 home such as is pictured above.

Steel constructed street car bodies, insulated, storm windows, all weatherproof, and includes seats, stoves and wired for electricity. In excellent condition.

TERMS AS LOW AS $5.00 PER WEEK

SUITABLE FOR: Lake cottages, farm buildings, diners, motels, construction offices, storage units, used car offices, etc.

DIMENSIONS: Length—46' . . . Width 9' . . . Height—10'. WE ALSO HAVE BUSSES FOR SALE.

TRANSPORTATION SALES CO.

HO. 8272

18 miles S.W. of Mpls. on Hiways 169 and 212. After hours call COlfax 0131
Wire, phone, or write. $100.00 will hold one for future delivery.
MAILING ADDRESS: RT. NO. 1, HOPKINS, MINN.

STREET CAR BODIES—$395

DELIVERED FREE UP TO 100 MILES

Steel constructed street car bodies, insulated, storm windows, all weatherproof, and includes seats, stoves and wired for electricity. In excellent condition.

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TRANSPORTATION SALES CO.

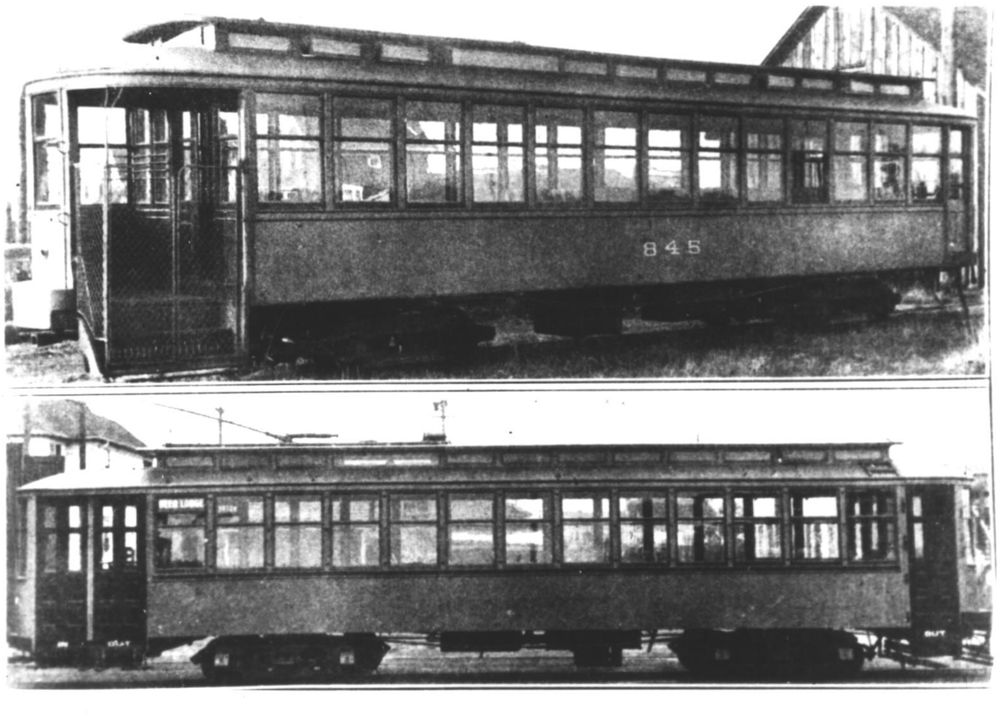
HO. 8272 • 1900 2nd ST., HOPKINS, MINN. • CO. 0131 case. Such a hole should suggest to the maintainer that the new gear case be truly set before being allowed to go.

CARS RECONSTRUCTED IN COMPANY SHOPS REPLACE DESTROYED EPUIPMENT

To Solve Acute Car Shortage Winnipeg Electric Railway Remodels Cars To Conform with Equipment Standards

The Winnipeg Electric Railway Company has just placed in service twenty modern up-to-date low floor cars. These cars embody most of the latest features in city transportation rolling stock and replace those lost in the fire at the company's barns on April 7, 1920.

Following the destruction of the cars in the fire, tenders for new cars were called, but immediate delivery could not be promised. It was imperative that the rolling stock be increased in order to take care of the winter rush, and the company therefore purchased twenty passenger car bodies without trucks or motors from the Twin City Rapid Transit Company, Minneapolis, in July, 1920, and rehabilitated them in its own shops. The demand for street cars during the long winter months far exceeds the summer demand, for the reason that comparatively few of the 20,000 automobiles owned in Winnipeg are kept in service during the winter months on account of the severe weather. An illustration of the Minneapolis cars as they appeared in the Winnipeg Electric Railway Company's shops before rehabilitation, is shown, herewith. The features embodied in these cars adapted themselves to the standard rolling stock of the Winnipeg Electric Railway Company.



Above—One of the Cars Purchased From Twin City Rapid Transit Company. Below—Car Remodeled To Conform With Winnipeg Electric Railway Standards

Exterior Changes

In the process of rehabilitation the cars were first stripped of their rear vestibules and interior fittings, and front and rear bulkheads; all to be replaced as may be seen in the illustration by the features which make up the company's standard, single end, double truck, pay-as-you-enter, low floor car with front and rear exit and rear entrance. In order to incorporate these features it was found necessary to lengthen the rear vestibule 30 in. This was accomplished by placing on each side of the car one ½ in. by 5 in. by 5 in. angle iron vestibule knee 8¾ in., from outside of car body extending back parallel with the sides of the car to a point of intersection on the ½ in. by 7 in. steel bumper, these vestibule knees being supported by carrier bolts and plates held by the steel body truss under the bulkhead. These, in addition to extension on old vestibule knees and lateral braces, hold the vestibule firmly in position. The original vestibule was then replaced and posts securely bolted to crown head, and the intervening space in the floor and roof filled in. This gives ample room for the conductors compartment, and also for the entrance and exit double folding doors.

Interior Changes

Owing to the front vestibule floor being on the same plane as the car floor it was found necessary to drop a pit the size of the front passenger vestibule in order to have the one step from the vestibule floor to the pavement. The steps on these cars are, from pavement

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to first step 15 in., from first step to vestibule floor 14 in., from vestibule floor into car 6 in.

The interior of the car as shown in the illustration has six rattan cross seats on each side, with longitudinal seats on both sides in front and rear of the car, giving in all a seating capacity of forty-two passengers. The front bulkhead has a double acting door leading into the passenger vestibule thereby closing off the cold and draft when the front vestibule door on the outside is open. This door is operated jointly with the step from the motorman's compartment.

USE FRONT EXIT

Interior of Winnipeg Remodeled Car

All steps in and out of the car are equipped with lead-filled safety tread, eliminating to a minimum accidents due to passengers slipping on the steps. The rear entrance and exit doors are operated by the conductor, the same mechanism and similar features as applied to front door being used. The entrance to the car is the last door on the rear, thereby giving ample standing room for passengers while the conductor is making change or issuing transfers.

The desination signs with forty-seven route names on each are placed in three locations, one on the right side of the front vestibule in gothic sash, and one on each side in the last gothic sash on the car body. These signs are of the roller type and are worked from the inside of the car body.

Heating and Mechanical Equipment

The cars are equipped with a hot water heating system and are fitted throughout with new equipment of the latest design comprising arch bar trucks with 26 in. steel wheels; C. G. E. 258 C air-cooled, ball-bearing motors, inside hung; K.6 controllers; National compressors; type G Westinghouse governors; M. R. circuit breakers; 3-bank type C. G. resistance 8 in. brake cylinders; and Dayton No. 45 drop brake handles.

Lighting Equipment

Every consideration has been given to the safety and convenience of the passengers, the cars being equipped with a door signal system, the operation of which notifies the motorman when the doors are closed or open by means of a small lamp placed in front of him. The Faraday high tension buzzer system is used with buzzer in front and rear vestibules. The lighting system of the car comprises one 23-watt, five-light system with trouble light, headlight, front exit light, front destination sign light, and two lights in rear vestibule; and also one 56-watt, five-light system in car body with Selector system in conjunction with same. All the lights in the car body and vestibules are fitted with large opal shades. The conductor's cab is equipped with an individual heater (run from the trolley), folding seat, foot rest, etc.

The dimensions of these cars are follows:

Overall length	45 ft.,	7 in.
Car body	33 ft.,	3 in.
Front vestibule	4 ft.,	4 in.
Rear vestibule	6 ft.,	10 in.
Overall width	8 ft.,	6 in.
Overall height	8 ft.,	4½ in.
Rail to top of roof	10 ft.,	8½ in.

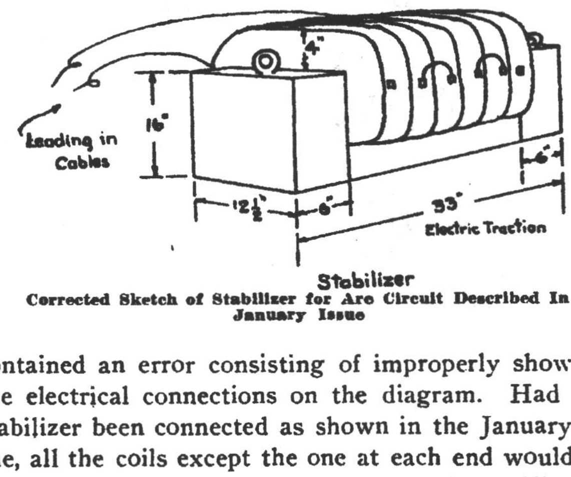
Thirteen windows are placed to side of car body and the approximate weight is 36,000 lbs.

In the painting of the cars the enamel system has been used for the exterior and headlinings, the color scheme being, tan color below belt rail, ivory above belt rail, with the exception of sash and doors which are of cherry, while the roof is oxide red. The interior is of natural cherry oiled and varnished with ivory headlinings.

◆

STABILIZER FOR ARC CIRCUIT

The article under the above title by F. J. Foote, master mechanic of the Ohio Electric Railway, appearing on page 24 of the January issue of Electric Traction, contained an error consisting of improperly showing the electrical connections on the diagram. Had the stabilizer been connected as shown in the January issue, all the coils except the one at each end would be shorted out and the device be of little effect. The accompanying sketch shows the proper connections.



Stabilizer
Corrected Sketch of Stabilizer for Arc Circuit Described In January Issue

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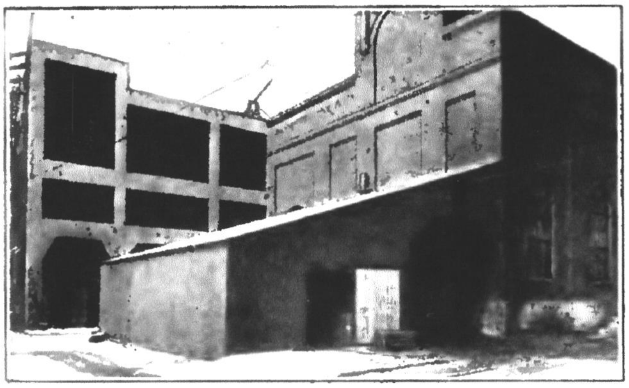
crete, built solid to prevent accumulation of material underneath and producing a saving of $245; the removal of work benches from the turbine room to a special room fitted up for a mechanic's shop at a saving of $50.90 per year; the installation of more steel waste cans; the replacement of wooden scrap bins with concrete bins, the purchase of more fire extinguishers, etc.

In addition to these physical improvements, the program has included a general campaign among the workmen to induce them to keep their work places clean and free from any accumulation of rags or rubbish. Each man endeavors to leave his work place in the best of condition every night. This work of appealing to the men to keep things clean and safe has been very successful because it has been possible to show them where this care results in actual money saving to the company, through reduction in insurance rates. Mr. Sawyer believes that the men do better work and that they have more self-respect if their place of employment is kept in an orderly manner.

A rather keen competition between different departments of the company in this matter of orderliness has been inspired as the result of the monthly reports made by H. J. Hodson, who has charge of the safety work of the company and of this insurance campaign. After his monthly inspection tour, which is made at the most unexpected times, Mr. Hodson writes a report in which all of the properties are classified into three divisions under these headings: "In a clean and orderly condition," "In a fairly clean condition" and "In a dirty and disorderly condition." When a department is listed under the second or third heading, it is accompanied by a few brief remarks giving the nature of the condition which has brought this classification. After these reports are written, they are submitted to Mr. Sawyer and then posted simultaneously on every bulletin board and sent to every department head. The result of this monthly report has been to promote great effort and care among the workmen to keep their department in the first group. For this reason, any one displaying slovenly work is usually "called" by his fellow employees.



STEEL SHED BUILT TO REPLACE WOODEN PROTECTION FOR COAL UNLOADERS, AND EXTENDED TO PROVIDE STORAGE FOR BOILER ROOM SUPPLIES

Because of his frequent visits over the entire property and his close contact with the employees in all branches of the company's service Mr. Hodson has been very helpful to Mr. Sawyer in providing a close contact between the management and the employees. Mr. Hodson has often been able to bring to the attention of Mr. Sawyer cases of employees in personal difficulties, wherein a little timely help on the part of the company could be given with a very worth-while effect.

Rebuilt Cars Relieve Shortage

Winnipeg Electric Railway Has Replaced Rolling Stock Lost by Fire Last April with Cars Reconstructed from Second-Hand Bodies Purchased from the Twin City Rapid Transit Company

THE Winnipeg (Man.) Electric Railway has just placed in service twenty remodeled low-floor cars. These embody most of the latest features of rolling stock for city service and replace those lost in the fire at the company's Main Street carhouse on April 7, 1920. Following the destruction of the cars in the fire bids for new cars were asked for, but immediate delivery could not be promised. It was imperative that the amount of rolling stock be increased in order to take care of the winter rush and so the company purchased twenty passenger car bodies without trucks or motors from the Twin City Rapid Transit Company of Minneapolis, Minn., in July last and has rehabilitated them in its own shops.

DETAILS OF THE REMODELING

In the process of reconstruction the cars were first stripped of their rear vestibules, interior fittings and front and rear bulkheads, all to be replaced by the features which make up the company's standard, single-end, double-track, pay-as-you-enter, low-floor car with front and rear exit and rear entrance. In order to incorporate these features in the reconstructed cars it was found necessary to lengthen the rear vestibule 30 in. This was accomplished by placing on each side of the car one ½-in. x 5-in. x 5-in. angle-iron vestibule knee extending back 8¾ in. from outside the car body, parallel with the sides of the car to a point of intersection on the ½-in. x 7-in. steel bumper. These vestibule knees are supported by carrier bolts and plates held by the steel body truss under the bulkhead. These, in addition to extensions on old vestibule knees and lateral braces, hold the vestibule firmly in position. The original vestibule was replaced next, posts were securely bolted to the crown head and the intervening space in the floor and roof was filled in. This gives ample room for the conductor's compartment and for the entrance and exit double-folding doors.

As the front vestibule floor of the old cars was on the same level as the car floor it was found necessary to provide a drop pit the size of the front passenger vestibule in order to have but one step from the vestibule floor to the pavement. The steps on these cars are 15 in. from pavement to first step, 14 in. from first step to vestibule floor and 6 in. from vestibule floor into the car. The car is furnished with six rattan cross seats on each side, with longitudinal seats on both sides, front and rear, giving in all a seating capacity of forty-two passengers.

PREVENTING INRUSH OF COLD AIR

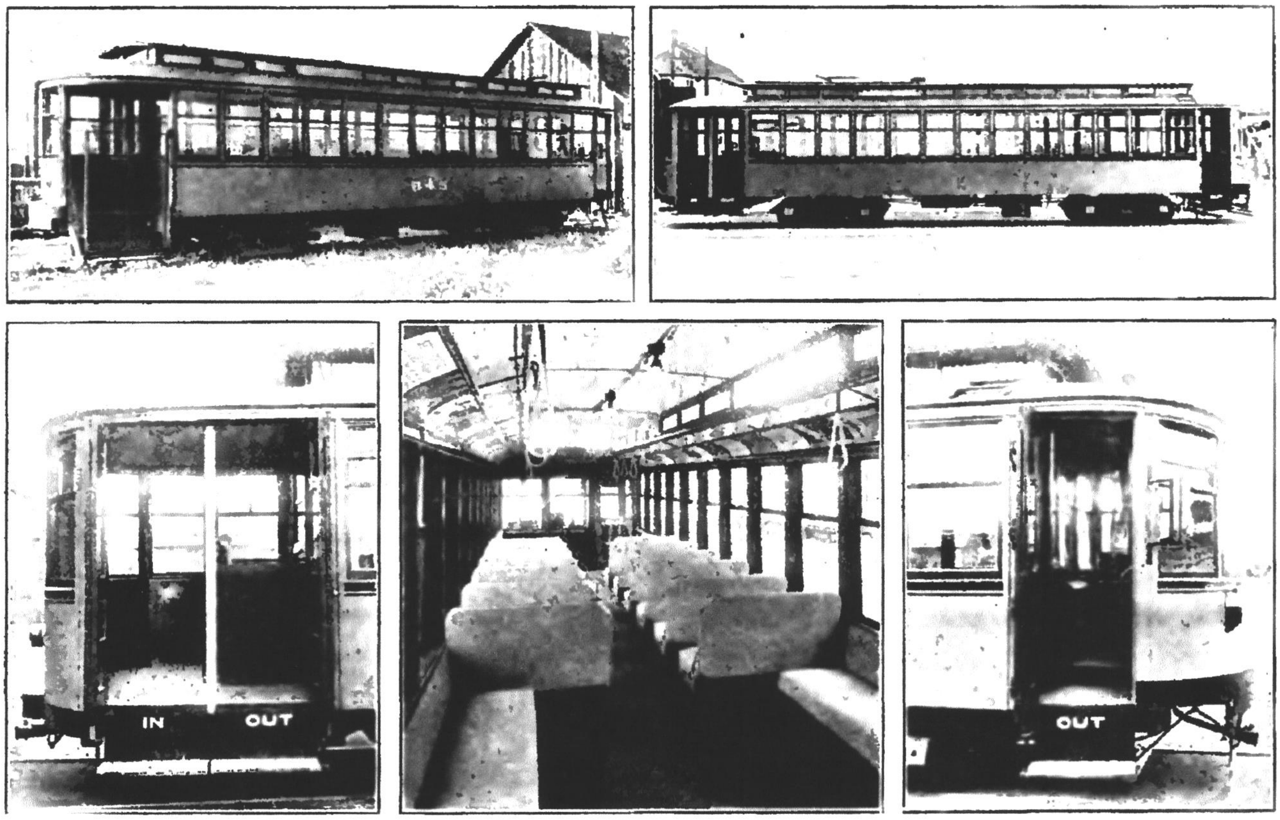
The front bulkhead has a double-acting door leading into the passenger vestibule which closes off the cold and draft when the front vestibule door on the outside is open. This door is operated jointly with the step from the motorman's compartment by means of McGuire-Cummings door-and-step operating mechanism. All steps in and out of the car are equipped with Mason lead-filled safety tread, thus minimizing accidents due to passengers slipping on the steps. The rear entrance and exit doors are operated by the conductor, the same mechanism and similar features as applied to the front

PARTIAL LIST OF DIMENSIONS IN THE REBUILT CAR

Over-all length	45 ft. 7 in.
Car body length	33 ft. 3 in.
Front vestibule length	4 ft. 4 in.
Rear vestibule length	6 ft. 10 in.
Over-all width	8 ft. 6 in.
Over-all height	8 ft. 4½ in.
Rail to top of roof	10 ft. 8½ in.
Approximate weight	36,000 lb.

door being used. The entrance to the car is the rear door of the rear vestibule, giving ample standing room while conductor is making change or issuing transfers.

Destination signs are placed in three locations—one on the right side of the front vestibule in the gothic sash and one on each side in the last gothic sash on the car body. These signs are of the roller type and are worked from the inside of the car body. There are forty-seven route names on each.



AT TOP, APPEARANCE OF CAR BEFORE AND AFTER RECONSTRUCTION; CENTER VIEW, SEATING ARRANGEMENT OF REMODELED CAR; REAR (LEFT) AND FRONT (RIGHT) PLATFORMS AS RECONSTRUCTED

The cars are equipped with a hot-water heating system and are fitted throughout with new equipment of the latest design which comprises McGuire-Cummings No. 46 archbar trucks with 26-in. steel wheels; GE-258-C air-cooled ball-bearing motors, inside hung K6 controllers; National compressors; type G Westinghouse governors; M.R. circuit breakers; three-bank type C. G. resistor; 8-in. brake cylinders and Dayton No. 45 drop brake handles.

To give safety and convenience to the passengers, the cars are equipped with a door signal system the operation of which notifies the motorman by means of a small lamp placed in front of him when the doors are closed or open.

The Faraday high-tension buzzer system is used, with a buzzer in the front and rear vestibules. The lighting system of the car comprises one 23-watt five-light circuit with trouble light. This circuit includes the headlight, front-exit light, front destination sign light and two lights in the rear vestibule. There is also one 56-watt, five-light circuit in the car body and a selector system in conjunction therewith. All the lights in the car body and vestibules are fitted with large opal shades. The conductor's cab is equipped with an individual electric heater, folding seat, foot rest, etc.

Some dimensions of these cars are given in the accompanying table.

In the painting of the cars the enamel system has heen used for the exterior and headlinings, the color scheme being tan color below belt rail, ivory above belt rail, with the exception of sash and doors, which are of cherry, while the roof is oxide red. The interior is of natural cherry oiled and varnished with ivory headlinings.

Attacking the Snow Problem

THE New York State Bureau of Municipal Information has sought reports from American cities, according to the February issue of the *American City*, on the method and kind of apparatus used for snow removal, in order to make available to municipal officials complete and up-to-date information. This is important because of the necessity of keeping at least the main arteries of travel free from snow. The reports seemed to indicate that municipal authorities are paying more attention to their methods of attack and consequently have formed some sort of an organization. Some now recognize the efficacy of beginning work while the snow is falling. The reports agree that wherever possible effective machinery should be used to reduce dependence on labor to a minimum, including the use of equipment available for temporary conversion for snow fighting.

AVAILABLE PASSENGER CARS

Built

5/29/1916	to and including	1788		
1916		1789 to 1835		1,033
1917		1836 to 1854		47
1916		2000 - 2001	1917	19
1921		2002 - 2003		2
				2
	As of December 9th, 1921			1,103

Retired

May 29, 1918	To City of Tacoma, Washington Cars 820-21-22-23-24-26-27-28-30-31 - - - - - - - - -	10
July 27,1918	To City of Tacoma, Washington Cars 766-67-76-78-87-817-18-19-25-29 - - - - - - - - -	10
Oct. 28,1918	To Seattle Municipal Railway Cars 763-65-68-69-70-71-72-73-74-75-77-79-86, 788-97-98-99-803-04-05-07-08-10-11-12 - - - - - -	25
Oct.10,1918	To Cripple Creek Collieries Co. Car No. 899 -	1
Nov.18,1918	To Duluth Street Railway Co. Cars 1202-04-12-31-32-34 - - - - - - - - - - - - - - -	6
Feb.26,1920	Car 1258 destroyed by fire - - - - - - - - - - - - -	1
July 7,1920	Sold to Winnipeg Electric Railway Co. Cars 832-33-34-35-36-37-38-39-40-41 - - - - - - - - -	10
Sept.3,1920	Sold to Winnipeg Electric Railway Co. Cars 842-44-45-46-48-49-50-51-52-53 - - - - - - - - -	10
		73
	Number as of Dec. 9th, 1921	1,030
1920	Destroyed No.1114	1
		1,029
Aug.17,1925	Less cars burned 860-61-62-63-64-65-71-72-74-77-79-947-51-873	14
		1,015
Add Stillwater Cars Nos. 1, 2, 3, 4		4
		1,019
Less Car 762 built over into Supply Car		1
		1,018
1926 Add cars Nos. 2004 - 2005		2
1927 Add cars 2006 to 2030		25
26 trailers 1019 motor Total Passenger Cars owned May 15th, 1930		1,045
Nov. 1933 1006 Burned	1	
JUNE 1934 Sold	95	96
5-15-30	1/1/35	949
~~1936 Sold~~		
Dismantled 225 1935		1
		948
173 Sold 1936		173
1936 1134- [illegible] car 1610- 1629 - wrecked		1
	1/1/37 -	772

SUBSEQUENT DISPOSITION OF THE PCC CARS

NEWARK

Last Cars Ran 8-24-2001
(14 was the last car operated)

4 cars Wrecked
8 (327) Jan 1968 (1965?)   18 (337) Jul 1969   29 (418) Jul 1966 Scrapped Jul 1978
30 (419) Jul 1969

2 cars Sold to Shaker Heights Rapid Transit, Cleveland, Ohio, Nov 1977
3 (322)   27 (416)   Retained the same numbers
3 is now at Minnesota Streetcar Museum   27 is now at Branford Trolley Museum (Shore Line)

1 car Retaiined as a Work Car
16 (335)

1 car to City of Newark
1 (320)

8 cars to Peninsula at Bayonne Harbor (waterfront redeevelopment project) (1.15 miles)
(New Jersey Transit retained ownership)
4 (323)   7 (326)   13 (332)   15 (334)   24-26 (363,364,415)
28 (417)

Oct 2009 project apparently not going to happen.
Mar 2012 all 8 cars at HBLRT Jersey City shops. (SEE NEXT PAGE)

11 cars Sold to San Francisco Municipal Railway 2004

14 (333)	SF 1070	(Leased Feb 2002; sold 2004)
2 (321)	SF 1074	
9 (328)	SF 1080	
11-12 (330-331)	SF 1079, 1076	
17 (336)	SF 1075	
19-23 (338-339, 360-362)	SF 1078, 1072, 1077, 1073, 1071	

3 cars to New Jersey Transportation Heritage Center, Phillipsburg, N.J.

5 (324)	April 2011 to Seashore Trolley Museum, Maine
6 (325)	April 2011 to Rockhill Trolley Museum, Rockhill Furnace, PA
10 (329)	Aug 2012 to Sep 2013 Sold to United Transportation Corp./Rail Air Sources, Morton, PA. Exchanged for two U-2 LRV's from Metropolitan Transit System, San Diego, CA. (to be San Diego 530)

Newark City Subway

1-8-1954 The first car, 10, entered service.
2-5-1954 The first day of all PCC operation.
8-24-2001 Last day of PCC operation.

Newark PCC Cars

Newark PCC Car Dispositions
January 2014

4(323) - Now en route to Illinois Railway Museum.

7(326) - Now at the New York Museum of Transportation (Rochester)

13(332) - Friends of the NJ Transportation Heritage Center (held in a secure, non disclosed location)

15(334) - Connecticut Trolley Museum

24(363) - Now at an undisclosed secure location for potential use in San Diego.

25(364) - Now at Branford (Shore Line Trolley Museum)

26(415) - Now at Baltimore Streetcar Museum.

NJT is keeping car 28(417) for their own use.

1 and 16 will also be leaving in the near future.

1(320) will be held at an undisclosed secure location for the Friends of the NJ Heritage Center.

16(335) will be held at an undisclosed secure location for potential use in San Diego.

Nov. 2, 2005

I now have the complete list of ex-New Jersey Transit PCC numbers, and their corresponding Muni numbers. See below.

1. NJT PCC # 9 = Muni PCC # 1080 -- LATL "Fruit Salad" yellow, green white. Already delivered.
2. NJT PCC # 23 = Muni PCC # 1071 -- Twin City Rapid Transit yellow, green
3. NJT PCC # 20 = Muni PCC # 1072 -- Mexico City green, cream, red.
4. NJT PCC # 22 = Muni PCC # 1073 -- El Paso red, green, white
5. NJT PCC # 2 = Muni PCC # 1074 -- Toronto maroon, black, cream
6. NJT PCC # 17 = Muni PCC # 1075 -- Cleveland orange, tan, brown, cream
7. NJT PCC # 12 = Muni PCC # 1076 -- Washington DC Transit aqua, green, persimmon
8. NJT PCC # 21 = Muni PCC # 1077 -- Birmingham blue, scarlet, cream
9. NJT PCC # 19 = Muni PCC # 1078 -- San Diego pea green, brown, cream
10. NJT PCC # 11 = Muni PCC # 1079 -- Detroit red, cream, white
11. NJT PCC # 14 = Muni PCC # 1070 -- Newark Public Service Coordinated Transport gray and blue with red wheels and wing emblem

Presumably, the cars may be delivered in the order shown. #14 (1070), being the last to arrive at Brookville, will, of course, be the last to return.

SUBSEQUENT DISPOSITIONS OF THE PCC CARS

CLEVELAND (SHAKER HEIGHTS)

51-55 were operated singly. 56-70 were equipped with multiple unit controls and couplers obtained from the Baltimore Transit Company which acquired 25 sets in 1944 for an authorized order of 100 cars from Pullman-Standard Mfg. Co. which was never finalized.

3 cars Wrecked
  57 (346) yard collision about 1981; Scrapped 1988
  59 (348) and 65 (354) head-on collision Jul 1977; Scrapped 1988

2 cars to Minnesota Transportation Museum Inc. Aug 1990
  3 (322) Restored to operating condition as TCL 322
  27 (416) Donated to Shore Line Trolley Museum, Branford, Conn., 2001

2 cars to Trolleyville USA Museum
  63 (352) 1985   66 (355) Jul 2003 for parts

63(352) to ILLINOIS RAILWAY MUSEUM
Oct 2009

2 cars to Vintage Electric Streetcar Co, Windber, Penn. (Ed Metka) 1982
  56 (345)   58 (347)

1 car to Ohio Railway Museum, Worthington, Ohio 1992
  64 (353) subsequently Scrapped

11 cars to Niagara Frontier Transit Authority, Buffalo, NY 1990
  51-55 (340-344)   60-62 (349-351)   67-70 (356-359)
  Never operated. Sold to Brooklyn Historic Railway Association Jun 2001

Brooklyn Historic Railway Ass'n was a proposed heritage line in the Red Hook area of Brooklyn, NY. 10 cars (51-55, 60-62, 67-69) were stored in the Brooklyn Navy Yard. A dispute with the city over payment or non-payment of storage fees resulted in eventual take-over by the Brooklyn Navy Yard Development Corp, which Scrapped the 10 cars May 25-26, 2005. The eleventh car, 70, is still (2007) in outside storage at the BHRA shop at Red Hook.

2-9-2014 70 TRUCKED TO BERA (BRANFORD ELECTRIC RY. ASSN).
DONATION. DAMAGED BY HURRICANE SANDY IN 2012

SUBSEQUENT DISPOSITIONS OF THE PCC CARS

MEXICO CITY

All cars except 2299 were rebuilt during 1954-1956 with left-hand front and center doors.

Rebuilt 1974-1976 with one front door replaced by a body panel: 2302-2304, 2310, 2314, 2365-2367, 2369, 2371-2372, 2376, 2378, 2380, 2382, 2384-2389, 2391, 2393-2394, 2399, 2402, 2404, 2406, 2408, 2412-2414, 2424, 2429, 2432-2433, 2438.

Scrapped by 1972: 2436, 2437.
Scrapped in 1973: 2299.
Scrapped 1974-1976: 2370, 2377, 2381, 2428.

1979: tramway operation has ceased apart from the two isolated routes 53 Tlalpan and 54 Xochimilco. Routes operated from the Tetepilco carhouse ran for the last time 2-16-1979 and from the Azcapotzalco carhouse 5-19-1979 because of extensive road work over a large area of the city center. The car fleet remains intact at the carhouses.

The following month-year dates are the issue dates of the "Modern Tramway" magazine from which the information was taken.

Aug 1982: ex Twin-City rebuilt PCC cars now provide most of the service on the two remaining routes.

The 9-19-1985 earthquake destroyed 31 PCC cars (~~some~~ 26 ex Detroit); ~~of which~~ 2414 was one. The trucks were salvaged for the proposed Moyada cars. Also 2371, 2374, 2383, 2388.

Dec 1985: a local factory,Moyada, rebuilt three PCC cars ([redacted]) into one three-section, four truck, double end articulated car with five doors holding some 400 passengers. Jul 1986: sixteen four-truck cars had been ordered (in addition to the one already built) from Moyada. The seventeen total cars were numbered 000-016. Apparently 43 to 51 PCC cars were used in this rebuilding. We don't know if these were exclusively Twin City cars or a combination of Twin City and Detroit cars. Accordingly these Moyada cars are discussed separately.

Jan 1991: four un-rebuilt cars, 2303, 2315, 2385 and 2406 stored at the Azcapotzalco carhouse are being restored. April 1991: repainted in the orange and cream color scheme used at the time of withdrawal from service. April 1991: all other PCC cars have been sold for scrap (but see Feb 1993 following).

Feb 1993: the number of PCC cars to be retained has been increased to 15, including the four already cosmetically restored. Feb 1994: 15 PCC cars (including the four cosmetically restored) remain in storage at the Axcapotzalco carhouse, retained by STE.

May 1995: most of the 15 stored PCC cars have been scrapped. The four cosmetically restored cars plus two other cars survive. Jun 1995: in addition to the six traditional configuration PCC cars surviving at the Azcapotzalco carhouse, 2434 is stored in the open at Tetepilco carhouse.

On August 3, 1995, all stored tramway and LRV rolling stock were sold at auction for scrap. This included all six PCC cars at Azcapotaalco carhouse. A single PCC car, 2434,survives unrestored at Tetepilco carhouse because it is owned by the Trades Union which has long planned to cnvert it to a snack bar for use at their sports field.

MEXICO CITY MOYADA CARS

Dec 1985: a local factory, Moyada, rebuilt 3 PCC cars [redacted] into 1 three-section, four-truck, double-end articulated car with five doors holdng some 400 passengers. MOTORES Y ADAPTACIONES AUTOMOTRICES

Jul 1986: 16 four-truck cars had been ordered from Moyada (in addition to the one already built). The 17 total cars were numbered 000-016. [redacted] Forty [redacted] PCC cars were used in this rebuilding(2½ PCC CARS PER 1 FOUR-TRUCK CAR).

Jul 1990: refurbishment of the Moyada cars planned.

Jul 1990: 12 three-truck LRV's based on the Guadalajara design have been ordered from Concarril, numbered 17-28. First car, 17, received Jan 12/13, 1991. Apparently these were replacements for the unsuccessful Moyada cars.

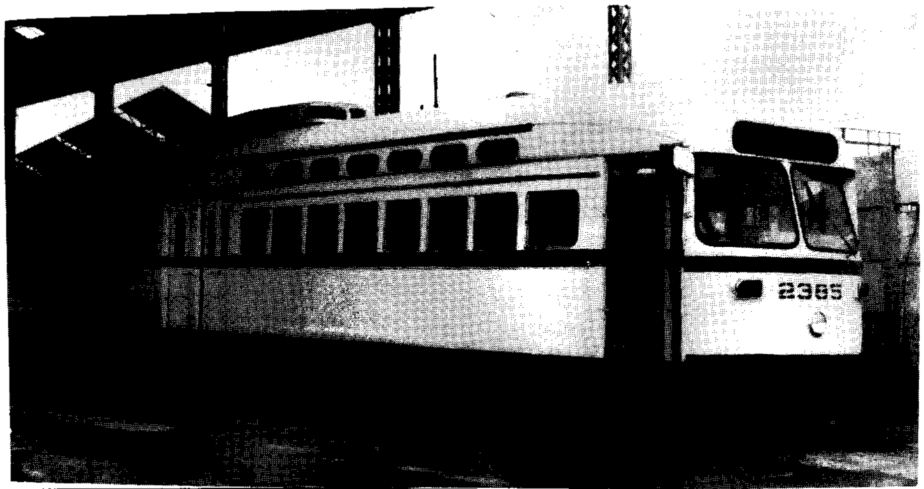
Apr 1991: six Moyada articulated cars have been refurbished: 000-002, 005, 010 and 016. Apparently some Moyada articulated cars were being scrapped. 1993 news items reported 004 was the third car scrapped in 1991 with either 014 or 015. Apparently a total of three cars were scrapped: 004, 008, and 015.

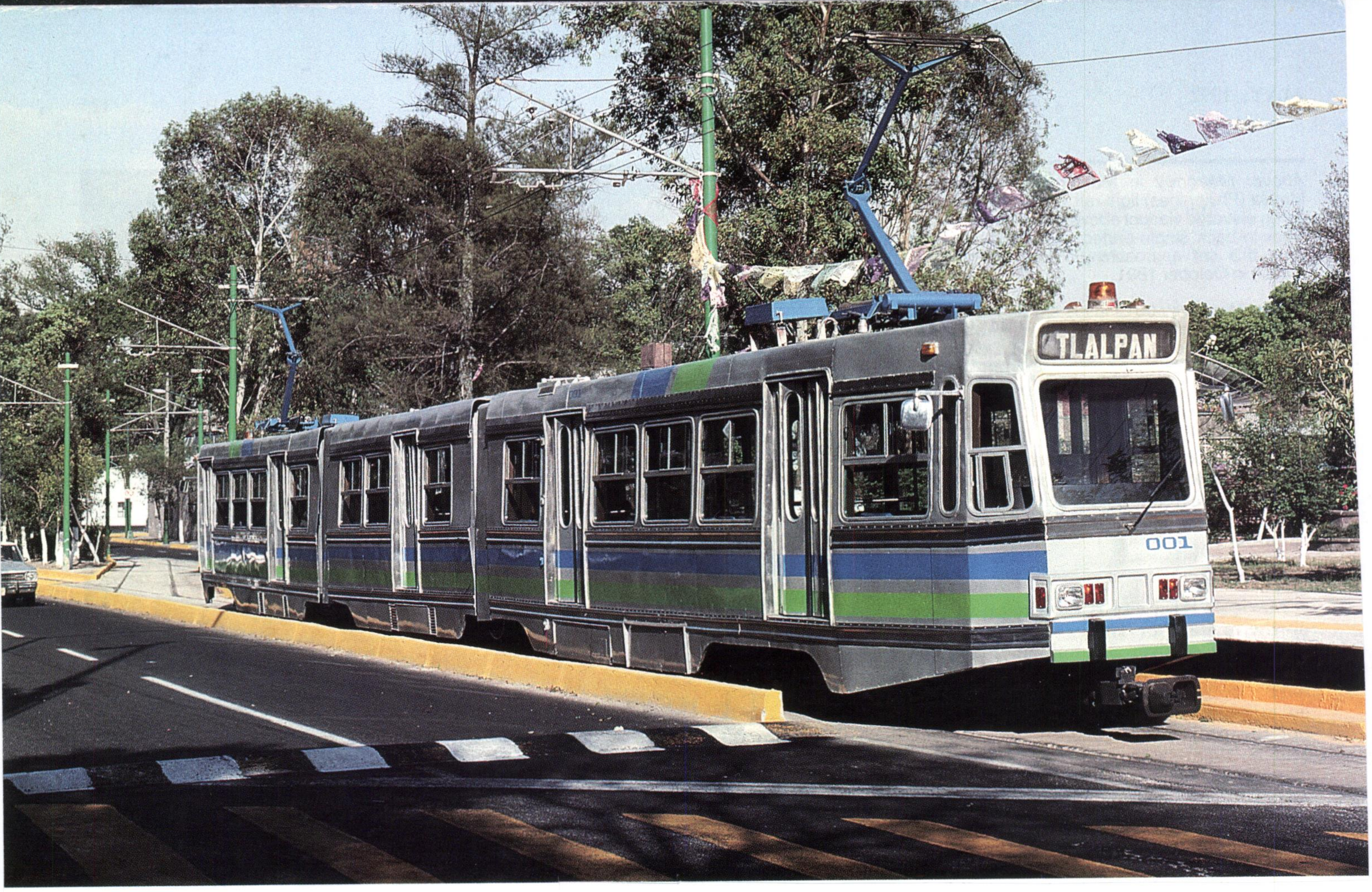
Apr 1991: when the new LRV's enter service on the Xochimilco line the Moyada cars will commence the service between Tasquena and Tlalpan. Jun 1992: there are two Moyada cars on the Tlalpan shuttle.

Feb 1993: Moyada cars 005, 010 and 016 are being rebuilt by Sintra with new bodies, wiring and controls, but retaining the PCC trucks and motors. Sep 1993: the three Sintra-Rebuilt Moyada cars entered service from 6-1-1993. Bodies are said to be heavy, resulting in sluggish performance from the PCC equipment.

Jun 1995: the 11 surviving Moyada cars, 000-003, 006-007, 009, 011-014, are stored in the open at the Azcapotzalco carhouse. The Sintra-rebuilt Moyada cars, 005, 010, 016 still run regularly as peak extras.

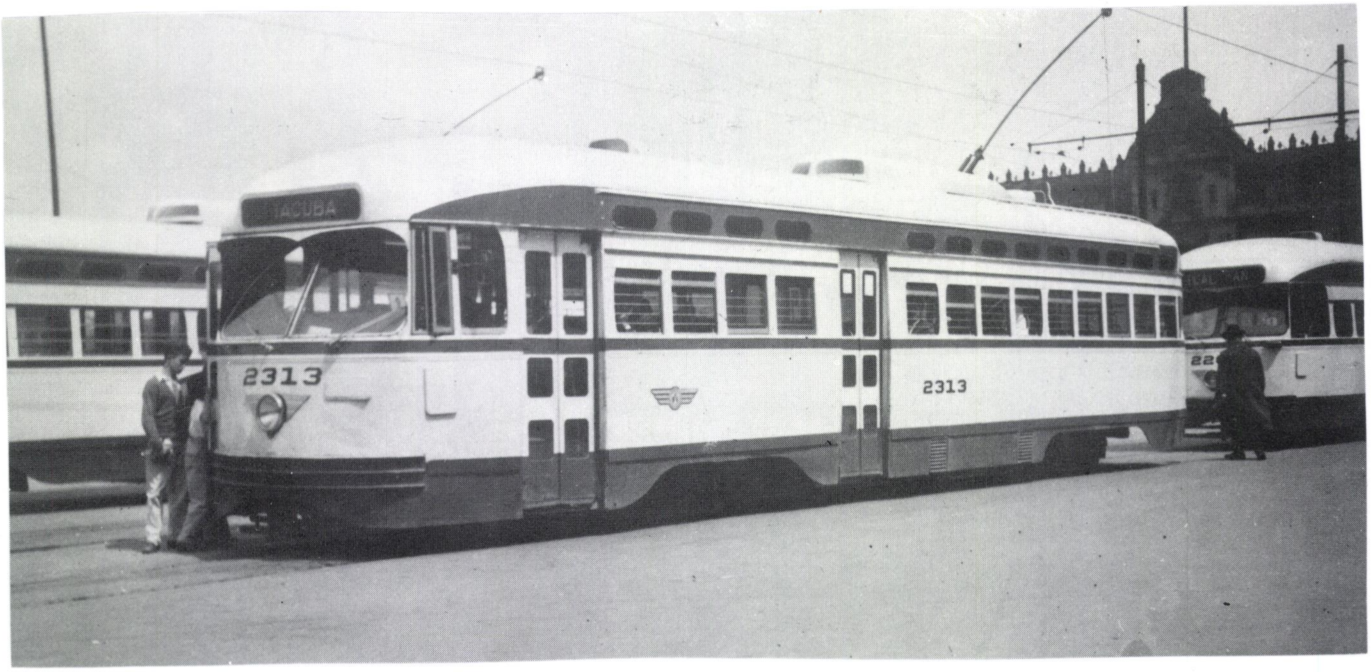
On 8-3-1995 all stored tramway and LRV rolling stock, including all 11 surviving Moyada cars were sold for scrap. Nov 1995: it was reported that the three Sintra-rebuilt Moyada cars had been withdrawn for scrapping.




TLALPAN
001

Above: Mexico City Moyada LRV 001 at the terminus of the Tlalpan branch on 15 March 1990.

▲ (S. J. Morgan


TACUBA
2313
2313
TLALPAN